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ABSTRACT

The Legal Reference Manual is one of a set of twenty-one manuals used in METRO-APEX 1974, a computerized college and professional level, computer-supported, role-play, simulation exercise of a community with "normal" problems. Stress is placed on environmental quality considerations. APEX 1974 is an expansion of APEX--Air Pollution Exercise (ED 064 530-550; ED 075 261; ED 081 619), and includes roles for an environmental quality agency, water quality manager, solid waste manager, and various pressure groups, in addition to the previously developed roles of city and county politicians, city and county planners, air pollution control office, developers, industrialists and newspaper. Two industries have been added, as have a number of program options. The participants may range in number from 17 to 100. Each run of the game should consist of at least three cycles (simulated years), the optimum being five cycles. Each cycle should span at least a three-hour period. A cycle is composed of two major phases: the first is the game simulation; in the second phase, decisions emerging out of the game simulation are analyzed by a computerized system of integrated simulation models. The METRO-APEX computer program is in Fortran IV and runs on an IBM 360-50 or higher series computer. (BT)

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METRO-APEX

volume 18.1

Legal Reference MANUAL

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revised 1974

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METRO-APEX

1974

A Computerized Gaming Simulation Exercise
For Training in Environmental Management
and Urban Systems

Developed by the
COMEX Project
University of Southern California

through a grant form the
Control Programs Development Division
Environmental Protection Agency

A revised version of the APEX Air Pollution Exercise
developed jointly by the
COMEX Project, University of Southern California
and
Environmental Simulation Laboratory, University of Michigan
June 1974

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FOREWARD

Manual Objectives

The law has always been somewhat of a mystery to nonlawyers. Several factors contributing to this phenomena can be identified. These include the specialized education which is required to fully understand legal concepts as well as the special language or jargon lawyers use to communicate.

In the early days, those concerned with environmental management busied themselves with research projects and the collection of data. Although these efforts continue to be important, the emphasis is now centered on causing the polluter to undertake preventative or corrective action. The vehicle most commonly used to accomplish these objectives is the law.

The LEGAL REFERENCE MANUAL is designed to present legal reference materials pertinent to the METRO-APEX game in a form which is understandable and useful. The layman will not be transformed into an environmental lawyer by utilizing these materials, but he should develop an appreciation of the important legal issues confronting the environmental manager and the available alternative legal strategies.

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PREFACE

PREFACE

METRO-APEX is the result of a long term research and development effort by a number of dedicated individuals. The inspiration, and much of the technical basis evolved from a similar exercise (M.E.T.R.O.) originally developed by the Environmental Simulation Laboratory, University of Michigan. In 1966, a grant from the Division of Air Pollution Control, U.S. Public Health Service was awarded to the COMEX Research Project, University of Southern California, to develop a dynamic teaching instrument, METRO-APEX. Working in close cooperation, the COMEX Research Project and the Environmental Simulation Laboratory successfully developed the initial version of the METRO-APEX exercise in 1971. This computer-based gaming simulation was designed to provide a laboratory urban community in which air pollution management trainees could apply and test the knowledge and skills gained through conventional educational methods.

METRO-APEX has proven to be highly adaptable to training programs dealing with the many aspects of air pollution control including law, management, air quality monitoring, land use planning, budget preparation, citizen participation programs, state and federal grant procedures, and political decision-making processes. As a result, METRO-APEX is in great demand as a valuable supplement to university training programs, and in many cases is being used as a central curriculum focus. Over 60 universities have been trained in the use of METRO-APEX. It has also been translated into French and Spanish and is being used in seven countries outside of the United States.

Based on the success of the initial METRO-APEX program, COMEX was awarded a grant from the Control Programs Development Division of the Environmental Protection Agency to substantially revise and broaden the simulation exercise to encompass the wide spectrum of environmental management issues. This current version, of which this manual is a part, was completed in June 1974 and greatly increases the utility and teaching potential of the exercise. In this version, the interrelationships among air, water and solid waste are demonstrated, the strategies and options available to players have been broadened, new roles have been added, the exercise materials have been updated to reflect the latest technology and nomenclature, and many of the operational problems associated with the earlier version have been rectified.

METRO-APEX is one of, if not the most complex gaming-simulations of an urban area in use today. Although it was designed to supplement standard teaching methods, APEX is far more than an educational tool. It is a communication channel of a new level--capable of providing both the language and the forum for information transfer between persons and groups with different educational and cultural backgrounds as well as different perspectives of the urban situation.

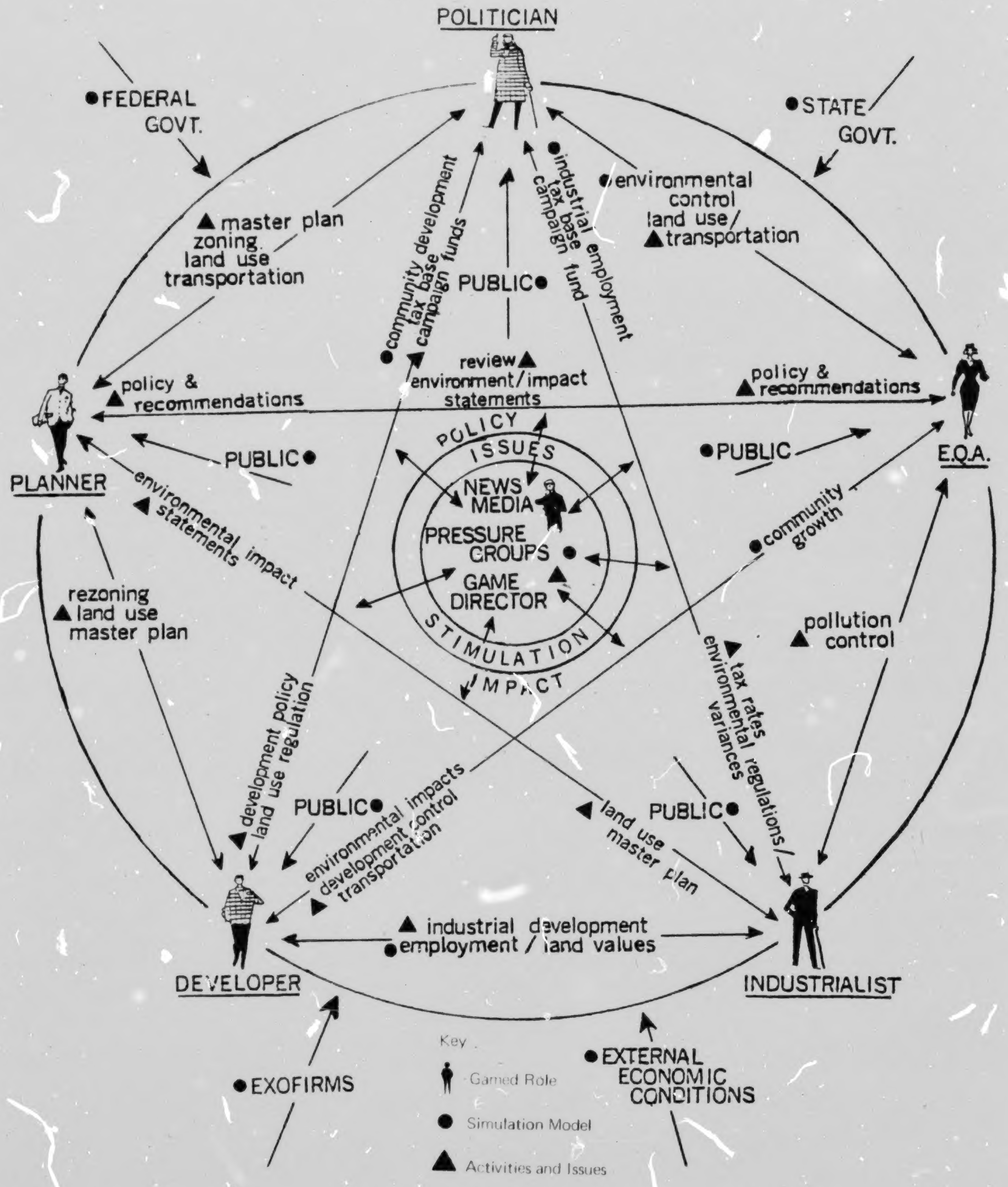
METRO-APEX is composed of two essential components: (1) a computerized system made up of a series of well-integrated simulation models linked to a (2) "gamed" environment encompassing a series of interactive roles. The computerized system predicts the changes that occur in several sectors of the urban system in response to the decisions made by participants in the "gamed" environment, decisions made by persons outside the "gamed" environment (other actors whose behavior is simulated in the computer), and external pressures on the metropolitan area (also simulated in the computer).

The County of APEX is run year by year by principle decision makers performing both the mundane and extraordinary functions of their office in the "gamed" environment. Each cycle or year is condensed in time to a three to eight hour session during which the decision makers formulate their yearly policy. The decisions that emerge out of the "competitive--cooperative" environment of the gaming-simulation are used as priming inputs to the computer simulation. The change in the status of the urban area is calculated by the computer and returned to the decision makers as the primary input to the next cycle of action. Included in the change picture generated by the computer are selected social, economic and physical indicators which show the magnitudes of change in key areas and a newspaper which serves as the focal point of local public opinion.

The key decision makers acting in the gamed environment include an Environmental Quality Agency with departments of Air Pollution, Water Pollution and Solid Wastes; Politicians, Planners and Administrative Officers from a Central City and a County; Land Developers and Industrialists from the private sector; and representatives from the News Media and Pressure Groups. The Politicians are responsible for the administration of their respective jurisdictions and for the formulation and implementation of various programs to upgrade the social status of their constituents. The Planners serve as aides to the Politicians and represent the major long range coordinating force in the community. The Environmental Control Officers are charged with the task of monitoring and alleviating the pollution problems. The private business sectors operate to foster their own interests and frequently those of the community. Pressure Groups and News Media advocate various positions on community issues. Generally, each decision maker finds it to his advantage to coordinate and/or compete with other players in his efforts to promote his strategies. The METRO-APEX General Interaction Diagram included here indicates possible linkages among the roles.

In general, people have great difficulty understanding the dynamics of a complex system through traditional means. Gaming-simulation offers participants the opportunity to study, work with, and discuss the structure of such a system and to experiment with intervention strategies designed to change that structure. When used as a teaching device, the strength of a gaming-simulation such as METRO-APEX lies in the opportunity afforded participants for involvement in the system. When compared with the passive observation of the system offered by traditional methods, this approach has had great success.

METRO-APEX INTERACTION DIAGRAM


POLITICIAN
FEDERAL GOVT.
STATE GOVT.
master plan zoning. land use transportation
community development tax base campaign funds
PUBLIC
industrial employment tax base fund campaign
environmental control land use/ transportation
review environment/impact statements
policy & recommendations
policy & recommendations
PLANNER
E.Q.A.
PUBLIC
PUBLIC
POLICY
ISSUES
NEWS MEDIA
PRESSURE GROUPS
GAME DIRECTOR
STIMULATION
IMPACT
environmental impact statements
community growth
rezoning land use master plan
pollution control
tax rates environmental regulations/ variances
development policy land use regulation
PUBLIC
environmental impacts development control transportation
land use master plan
PUBLIC
industrial development employment / land values
DEVELOPER
INDUSTRIALIST
EXOFIRMS
EXTERNAL ECONOMIC CONDITIONS
Key
Gamed Role
Simulation Model
Activities and Issues

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Legal Reference Manual.

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CHAPTER 1

A Brief Description of APEX County

Chapter 1

A BRIEF DESCRIPTION OF APEX COUNTY

History

The first settlers of APEX County were farm families emigrating from New England and New York State beginning about 1830. During the middle of the nineteenth century, German immigrants continued the settlement patterns of established dispersed family farms. Income to pay for the necessary imports of products from the East was derived primarily from the production of farm crops and, more importantly, timber. Small market towns, often containing milling facilities, developed between 1820 and 1860. At the same time, the County was organized as a unit of government by the State, and the basic network of roads was completed.

The major impetus for the later development of the Central City as a regional center was its selection as the state capitol in 1847. The nation's first land-grant university was established east of the Central City in 1855, further enhancing its growth. Central City was incorporated in 1859 and the Suburb, in which the university was located, was incorporated in 1910. The University's control of a large block of land was to exercise profound influence on the future physical pattern of development. Much of the logical development corridor outward from the City was preempted by this facility.

Steam railroads were first built into APEX County beginning in the 1860's. Those small market-milling communities with stops and depots on the rail lines began to assume a greater importance than the small communities away from the lines. The impact of the railroads on the small communities can be seen from the following description of Central City:

> By the year 1863, the City...was a bustling, urban center. Early accounts tell us that, at that time, the City included eleven churches, five hotels, two flouring mills, three tanneries, two breweries, three saw mills, two sash and blind factories, three iron foundries, two printing offices, several brick yards, and a large number of mechanic shops.*

Although growing, it should be noted that manufacturing was still minimal. Exports were dominated by agricultural and timber products, and most other production was for local consumption only.

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*Tri-County Regional Commission, "History of the Tri-County Region," Information Report 7, updated. pp. 24-25.

Beginning in perhaps 1880, factories producing goods to be exported out of the region were built in the area, fostered by the completion of railroad ties with the rest of the country. These factories, mainly built near railroad depots, stimulated the migration of factory-worker families into the region. Most of these families settled near the factories where they were employed, adding further to the growth of the towns near the railroad. Just before the turn of the century the introduction of the automobile industry into Central City gave the final impetus needed to make Central City into the dominant community in the County. Beginning about the same time, electric interurban railways were extended from Central City to the north, east and west, allowing many workers from the new industries in the City to move further away from their place of employment.

By the 1920's, automobiles had become readily available and their use was encouraged by the paving of most of the roads in the County. Those who had formerly lived fairly close to the interurban system began to be dispersed throughout larger areas and to settle in lower density neighborhoods. Until about 1930, most new development was found in the filling-in of the Central City and Suburb. Although the growth of industrial and bureaucratic functions proceeded in the Central City and the area adjacent to it, the more outlying townships remained, and to some extent still remain, predominantly agricultural. The growing urbanization which has occurred more recently in these fringe areas has been primarily stimulated by the construction of the interstate expressway system beginning in the 1950's.

The interstate highway freeway system in APEX County is shown on the map at the end of this chapter. One major expressway comes from the southeast, sweeps around the southern and western fringes of the City and leaves the County from its northwestern corner. A second expressway comes up from the south, intersects the first and continues northward into the Suburb. It is anticipated that in the future this expressway will be continued northwards, then swing west to finish an expressway loop around the City (dashed line).

In addition to the airport, major transportation into and out of APEX County is provided by rail (primarily freight) and expressway. The attached map outlines the routes of the three rail lines, which generally follow the river valleys and intersect in Analysis Area 8.

A local APEX bus line serves the Central City, with some service extended into the Suburb and nearby areas of the County.

Most travel in APEX is currently by private automobile. There are approximately 2.1 people per registered automobile in APEX. This amounts to approximately one billion automobile miles per year. The automobile is the cause of substantial congestion, property damage, death and air pollution in APEX. Further information about the contribution of the automobile to pollution can be obtained from the Air Pollution Control Officer.

The automobile represents an immense financial burden to owners, political jurisdictions, employers and commercial establishments. Taxes to expand and maintain the road network are constantly expanding. Vast areas of land are required for parking. At the same time, bus ridership is decreasing.

Political Jurisdictions

In the METRO-APEX game, the County is composed of four autonomous jurisdictions: The Central City, Suburb, Township 1 and Township 2. The County has been further divided into 29 "Analysis Areas", each resembling a census tract. The Central City comprises Analysis Areas 1 through 13; the Suburb, AA's 17 through 19; Township 1, to the west, contains AA's 23 through 28 and Township 2, to the east, contains AA's 14-16, 20-22 and 29. (See map). In addition to analysis areas, the Central City is politically divided into Wards:

Ward 1 -- AA's 1-4
Ward 2 -- AA's 5-8
Ward 3 -- AA's 9-13

Each Ward is the electoral district for one of the three City Council seats represented in the game. The County government (Board of Supervisors) is comprised of members elected from the Suburb, from the Townships, from the County-at-large and the Central City-at-large.

The City Council and County Board of Supervisors are the only two local governmental units actively represented in the game. Other local governments, including the school boards, are simulated. In some cases, City and County governments have parallel functions; e.g. they both provide police services, planning and capital improvements. The County however, has area-wide responsibility for three major services not provided by the City government: public health, welfare and pollution control. In these three areas, County actions, directly affect Central City residents as well as residents in the outlying areas. Both the municipal and County governments derive their primary financial support from the same tax base--real property. County property taxes are paid by land-owners, in addition to property taxes collected by the municipal government and the school board in each political jurisdiction.

Data provided to players in the game are nearly always given by analysis area--this is also the smallest unit of scale in referring to locations; that is, a project or house or industry is located in "Analysis Area X" rather than on a particular street or a particular intersection. Characteristics of each individual analysis area, including the socio-economic composition of the residents and the proportions of land area devoted to particular land uses, may be found in the Planners data.

A few analysis areas are almost completely characterized by one or two major features which are often referred to throughout play. These major features are given in the following list, with their analysis areas indicated:

Central Business District (CBD) -- nearly all of Analysis Area 8

State Capitol -- Analysis Area 8

Ghetto -- Analysis Area 4 and Analysis Area 8

University -- Analysis Area 19 (all)

"Best" residential areas -- Analysis Areas 9 (all) and 17 (most)

These features are not only unique in the County, but they also dominate the analysis areas in which they are located; in the game they are likely to be referred to as locations in themselves, with no further locational explanation given.

A list of other important man-made features of the County, and their locations, is given later in this chapter.

Geography and Climate

APEX County is located nearly at the center of an industrialized northern State, some 85 miles northwest of one of the largest metropolitan areas in the United States. The once heavily forested land, extending roughly 320 square miles, is quite flat and for the most part adequately drained for agriculture.

The Great River, a major watercourse in the State, enters the County from the south in Analysis Area 23, meanders north and west, then back to the east and north as it passes through Analysis Area 8. There it is joined by the Red Oak River, which comes in from the east. The enlarged Great River exits from the County in Analysis Area 26, from which it continues west for some 85 miles before emptying in to the Great Lakes. Major drainage of the County is through the Great River system.

Just before it empties into the Great River, the Red Oak River is joined by Sycamore Creek, which wanders up from the southeast. Much of the area in Analysis Areas 11 and 13, near this creek, is low and somewhat marshy, not ideal for heavy development. The other major marshy area in the County is in Analysis Area 14, to the northeast in Township 2. There are also several small lakes in this analysis area and quite a large State Park. The largest lake in the County is located in Analysis Area 16. This was a primary recreation area in the early part of this century but is less ideal now, due to heavy pollution loads and deteriorating shoreline development. There are small creeks which wander through many analysis areas in the County. The only other river of any significant size, however, is Looking Glass River, which runs east and west through the northern portion of the County, primarily in Analysis Areas 28 and 29.

The climate of APEX County is temperate, with summer temperatures averaging about 70 degrees and winter temperatures which average about 25 degrees. There is an annual rainfall of roughly 41 inches, with heavy snows to be expected primarily in the months of January and February. Prevailing winds are westerly, swinging to the southwest in summer and northwest in winter.

Major Public Facilities

As might be expected, the Central City and Suburb are significanly better endowed with public capital improvements than are the Townships. The following list includes the most important public structures in the County, and indicates under whose jurisdiction they are operated and where they are located:

Airport (County) -- AA 29, just outside the City limits. The Airport has three runways and a terminal of 27,000 square feet. Two commercial airlines serve the County through this airport; cargo and general aviation are also served.

Boys Training School (State) -- AA 7.

City Hall -- AA 6. This is an old structure, built 80 years ago and considered a scandal. A more central location has been chosen for the new City Hall under construction in AA 8.

Community Centers (City) -- AA's 2, 4, 7, 8, 10, 13. These are mostly old houses purchased by the City to house neighborhood meetings and the operation of special programs.

Community Centers (Township Halls) -- AA's 14 (2), 24, 27, 29.

Community College (County) -- AA 8. The facility is currently housed in an old library and elementary school.

County Building -- AA 8, This includes all County offices and the meeting rooms for the County Board of Supervisors.

County Court House -- AA 8, adjacent to County offices.

Fire Stations (City) -- AA's 2, 3, 4, 5, 6, 8 (2), 11, 12.

Fire Stations (Townships) -- AA's 20, 23, 25. These are modest stations housing limited equipment. Volunteers provide firefighting manpower.

Hospital (County) -- AA 7. This was built in 1912 and was expanded in 1922, 1942, and 1960. It contains 362 beds, including a 35-bed tuberculosis wing, and caters primarily to the indigent. There are three private hospitals in the County with an additional 650 beds.

Library (City) -- AA 8. This is an old downtown building. There are branch libraries in AA's 1, 5, 11 12 (2), 13.

Library (Suburb) -- AA 18.

Sewage Treatment Plant (City) -- AA 2. This plant provides both primary and secondary treatment and has a capacity of 34 million gallons per day. It currently averages 22 million gallons daily.

Sewage Treatment Plant (Suburb) -- AA 19. This plant provides primary sewage treatment, with a capacity of 12 million gallons per day; it currently handels an average of 6.75 million gallons daily.

Sheriff Station (County) -- AA 8. This is attached to the County Building.

Water Treatment Plant (City) -- AA 8. Water for the City is derived from the Great River as it exits from Analysis Area 8. Capacity is 42 million gallons per day, with the average daily flow currently being 22 million gallons. Treatment includes filtration, purification, flouridation and lime softening.

Water Treatment Plant (Suburb) -- AA 19. The Suburb's water is drawn from the Red Oak River as it enters AA 19. Capacity is 6 million gallons daily, with current average flow being 2.5 million gallons per day. Treatment includes chlorination, fluoridation and ziolite softening.

Zoo (City) -- AA 7.

Industry and the Economy

Major employment in APEX County is provided by the State Capitol Complex, the University and a automobile assembly plant, located in Analysis Area 4. While State Government is a stable, slow-growing industry, the University, typical of "research and development" operations elsewhere, is growing at a very rapid rate. The automobile plant exhibits characteristics similar to any large manufacturing operation, fluctuating considerably in response to the national business cycle.

In addition to these "big three" employers, there is a host of industries supplying parts to the automobile industry, as well as independent industries exporting goods which have no relationship to autos. (A map and listing of the major industries in the County are found on the following two pages.) These include the seven gamed industries:

Industry 1 -- Shear Power Company
Industry 2 -- People's Pulp Plant
Industry 3 -- Rusty's Iron Foundry
Industry 4 -- Gestalt Malt Brewery
Industry 4 -- Caesar's Rendering Plant
Industry 6 -- Dusty Rhodes Cement
Industry 7 -- Schick Cannery

Members of the population of APEX County constitute a work force of about 101,000 people, nearly half of them employed by the major "exporting" industries previously mentioned. About 9% of total County employment is found in lighter industry and 41% in commercial and service activities for the resident population. The greatest concentration of manufacturing employment is, as expected, found in the Central City. The highest proportion of white collar workers is in the Suburb, due to the predominance of the University as an employer there. In the futute, it is probable that more and more new industrial growth and employment will occur in outlying areas, particularly among firms requiring significant amounts of land for their plants.

Population

Within the physical and political environment described in the preceding pages resides a population of some 227,000 persons, a tiny fraction of whom are represented in METRO-APEX as players. The remainder of the population is simulated by the computer in the game. About 63% of the population resides in the Central City, 10% in the Suburb and the remainder in the two Townships.

Only about 9.2% of the County's population is black; however, virtually all of this population is found in the Central City, of which 14.4% of the total population is black, primarily in Ward 1, where the number of non-white households approaches 38%. The only other significant ethnic minority is found in a Mexican-American community in the east-central portion of the city.

For purposes of the game, the population of APEX County has been divided into five "household types", each representing different occupations and educational achievements, life-styles, voting habits and consumption behavior. These will be described briefly here; more detailed information about each may be found in the Glossary.

Household type 1 is a combination of upper and upper-middle class families whose head of household are likely to be employed in the professions and business management. Household type 2 is typical middle class, occupations usually clerical and lower-level public service areas. Household type 3 includes very low white-collar workers and skilled craftsmen and shop foremen, the latter two predominately. While members of household types 1 and 2 have attended college, some with advanced degrees, household type 3 members are typically high school graduates. In outlying areas, farmers are included in this latter type. In household type 4 are found semi-skilled workers and non-domestic service workers. Usually household heads have not completed high school, and while many household type 4's are homeowners, the value of their housing is quite low. Household type 5 includes laborers, domestic workers and the unemployed, with a large number of the elderly. A majority of these households live in rental units of low value.

Initially, about 17.5% of the County population is found in household type 1, 16% in household type 2 and 27% in type 3; about 32% is of household type 4 and 7.5% fall into household type 5. The household composition of a particular analysis area, and of an entire jurisdiction, will affect significantly the demand for both public and private goods and services. It will also affect voting behavior on financial issues and in elections.

List of Major Industries

1. Shear Power Company (A.A. 8)
2. People's Pult Plant (A.A. 2)
3. Rusty's Iron Foundry (A.A. 5)
4. Gestalt Malt Brewery (A.A. 27)
5. Caesar's Rendering Plant (A.A. 12)
6. Dusty Rhodes Cement Company (A.A. 23)
7. Schick Cannery (A.A. 3)
8. Municipal Incinerator (A.A. 10)
9. Humpty Dump (A.A. 15)
10. Flies Dump (A.A. 26)
11. Auto Assembly Abel (A.A. 4)
12. Auto Assembly Baker (A.A. 4)
13. Auto Assembly Charlie (A.A. 6)
14. Wolverine Forging Plant (A.A. 7)
15. Finch's Forging Plant (A.A. 6)
16. Smithy's Forging Plant (A.A. 2)
17. Ahead Forging Plant (A.A. 6)
18. Wordy Printing Company (A.A.6)
19. Bogus Printing Company (A.A. 6)
20. Boylan's Fertilizer (A.A. 2)
21. Peter's Water Heaters (A.A. 7)
22. Tar Heel Asphalt Paving (A.A. 8)
23. Concrete Batching (A.A. 12)
24. Spartan Galvanizing Company (A.A. 8)
25. Monkey Brass Melting Company (A.A. 5)
26. Trojan Varnish Manufacturing (A.A. 10)
27. Hannah Feed and Grain (A.A. 1)
28. LaRue Soap and Detergent (A.A. 1)
29. Acme Dry Cleaning (A.A. 4)

30 Trojan Dry Cleaning (A.A. 7)

31. Losten Foundry -- Iron (A.A. 5)
32. Dusty's Cement Products (A.A. 3)
33. Rembrants Rendering (A.A. 27)
34. Wiffenpoof Fertilizer (A.A. 1)
35. Saint Andre Asphalt Paving (A.A. 15)
36. Oriental Concrete Batching (A.A. 20)
37. Daily Journal Printing (A.A. 7)
38. Tiger Body Assembly (A.A. 3)
39. Academic Feed and Grain (A.A. 13)
40. Spotless Dry Cleaning (A.A. 11)

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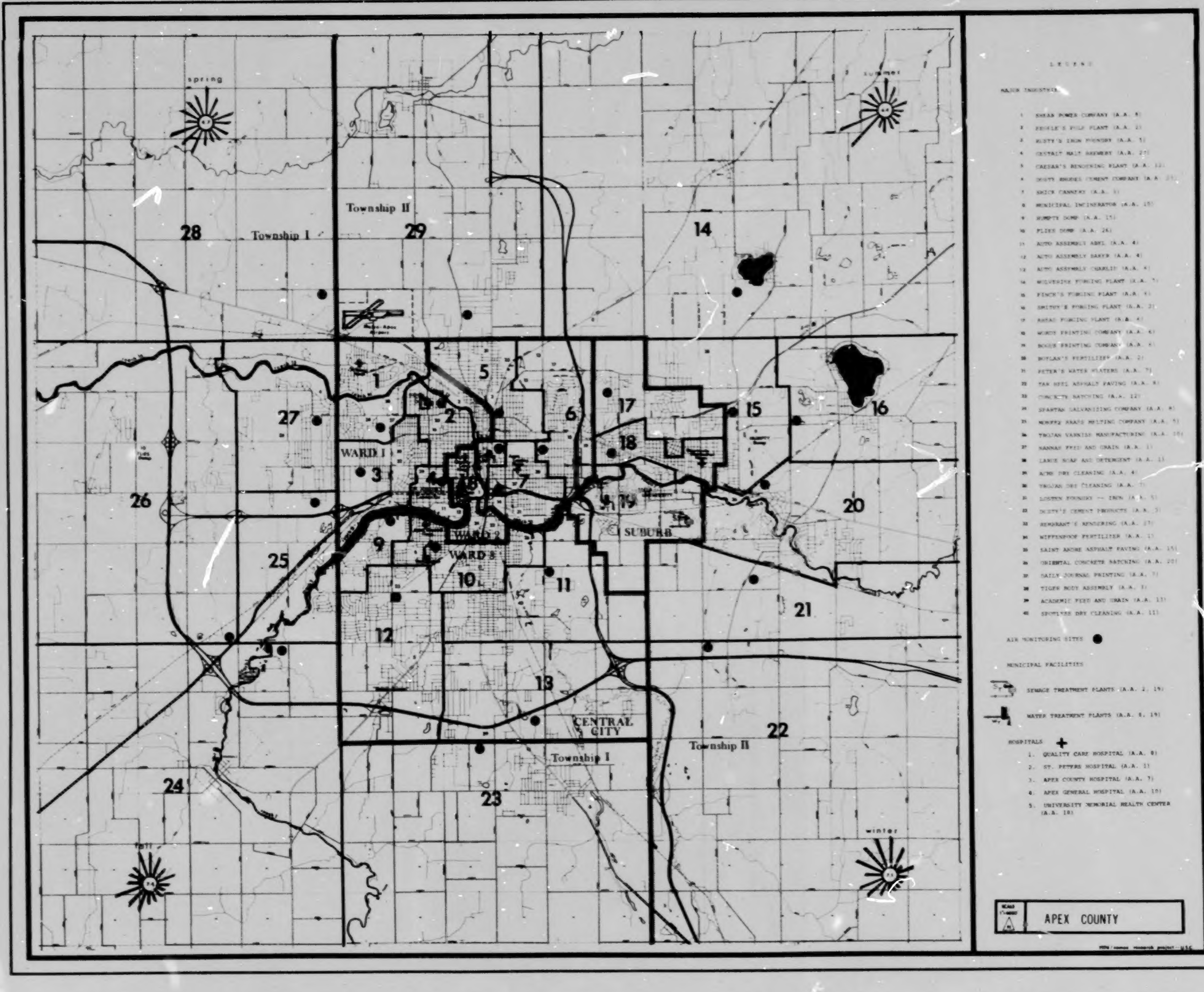
spring
summer
fall
winter
Township I
Township II
WARD 1
WARD 2
WARD 3
SUBURB
CENTRAL CITY
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
LEGEND
MAJOR INDUSTRIES
1 SHEAR POWER COMPANY (A.A. 5)
2 PEOPLE'S PULP PLANT (A.A. 2)
3 RUSTY'S IRON FOUNDRY (A.A. 5)
4 GESTALT MALT BREWERY (A.A. 27)
5 CAESAR'S RENDERING PLANT (A.A. 12)
6 DUSTY RHODES CEMENT COMPANY (A.A. 25)
7 SNICK CANNERY (A.A. 3)
8 MUNICIPAL INCINERATOR (A.A. 15)
9 HUMPTY DUMP (A.A. 15)
10 FLIES DUMP (A.A. 26)
11 AUTO ASSEMBLY ABEL (A.A. 4)
12 AUTO ASSEMBLY BAKER (A.A. 4)
13 AUTO ASSEMBLY CHARLIE (A.A. 4)
14 WOLVERINE FORGING PLANT (A.A. 7)
15 FINCH'S FORGING PLANT (A.A. 4)
16 SMITTY'S FORGING PLANT (A.A. 2)
17 AHEAD FORGING PLANT (A.A. 4)
18 WORDY PRINTING COMPANY (A.A. 6)
19 BOGUS PRINTING COMPANY (A.A. 6)
20 BOYLAN'S FERTILIZER (A.A. 2)
21 PETER'S WATER HEATERS (A.A. 7)
22 TAR HEEL ASPHALT PAVING (A.A. 8)
23 CONCRETE BATCHING (A.A. 12)
24 SPARTAN GALVANIZING COMPANY (A.A. 8)
25 WONKEY BRASS MELTING COMPANY (A.A. 5)
26 TROJAN VARNISH MANUFACTURING (A.A. 10)
27 HANNAH FEED AND GRAIN (A.A. 1)
28 LANCE SOAP AND DETERGENT (A.A. 1)
29 ACME DRY CLEANING (A.A. 4)
30 TROJAN DRY CLEANING (A.A. 7)
31 LOSTEN FOUNDRY -- IRON (A.A. 5)
32 DUSTY'S CEMENT PRODUCTS (A.A. 3)
33 REMBRANT'S RENDERING (A.A. 27)
34 WIFFENPOOF FERTILIZER (A.A. 1)
35 SAINT ANDRE ASPHALT PAVING (A.A. 15)
36 ORIENTAL CONCRETE BATCHING (A.A. 20)
37 DAILY JOURNAL PRINTING (A.A. 7)
38 TIGER BODY ASSEMBLY (A.A. 3)
39 ACADEMIC FEED AND GRAIN (A.A. 13)
40 SPOTLESS DRY CLEANING (A.A. 11)
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HOSPITALS +
1. QUALITY CARE HOSPITAL (A.A. 8)
2. ST. PETERS HOSPITAL (A.A. 1)
3. APEX COUNTY HOSPITAL (A.A. 7)
4. APEX GENERAL HOSPITAL (A.A. 10)
5. UNIVERSITY MEMORIAL HEALTH CENTER (A.A. 18)
APEX COUNTY
research project -- U.S.C.

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CHAPTER 2

Glossary and Reference Terms

Chapter 2

GLOSSARY AND REFERENCE TERMS

ABATEMENT

Abatement is the reduction of pollutant emissions from a source or sources.

AEROBIC

A process taking place in the presence of oxygen; or a state of liquid containing free dissolved oxygen.

AIR POLLUTION

Air pollution is the presence in the outdoor air of substances which, when present in a sufficient quantity or over a period of time, can cause an undesirable effect upon man, property, or the environment.

AIR POLLUTION REGULATIONS

Air pollution regulations are legal constraints on pollutant emissions, production processes, or control systems. State regulations and County regulations are enforceable by legal sanctions, while recommendations are not.

AIR QUALITY (See NATIONAL AMBIENT AIR QUALITY STANDARDS)

Air quality refers to the pollution concentration characteristics of the atmosphere or ambient air in a given area. It is usually stated in terms of the levels of concentration of specific pollutants, in micrograms of pollutant per cubic meter of air (Mgm/m3) (See CONCENTRATION).

Air Quality Goals are expressions of desirable maximum pollutant concentrations to be achieved through a pollution control program.

Air Quality Criteria - The basic medical and technical information which forms the rationalization from which Air Quality Standards are set. This information is published for each major pollutant by EPA in Air Quality Criteria Documents.

Air Quality Standards are quantitatively-specified maximum levels of pollutant concentrations or dosages, as more precise statements of air quality goals.

AIR QUALITY CONTROL REGION

One of the approximately 250 geographic areas covering the United States which form the basic units for air pollution control activities. These areas were designated by EPA (with the states) and are based on considerations of climate, meteorology, topography, urbanization and other factors affecting air quality.

ALERT STAGES

Alert Stages refer to critical levels of concentration or dosage signaling potential disastrous pollution effects and requiring emergency abatement and control measures.

ANAEROBIC

A process taking place in the absence of oxygen; or a state of liquid containing no free dissolved oxygen.

ANALYSIS AREA (A.A.)

Analysis areas are used as the primary areal reference units for the data and issues throughout the game. The County is divided into a number of analysis areas, each of which is the approximate size of several census tracts. The analysis areas included in the five jurisdictions are as follows:

Jurisdiction 1-- Central City: Ward 1 = AA 1 through AA 4
Ward 2 = AA 5 through AA 8
Ward 3 = AA 9 through AA 13

Jurisdiction 2-- Suburb: AA 17 through AA 19

Jurisdiction 3-- Township 1: AA 23 through AA 28

Jurisdiction 4-- Township 2: AA's 14-16, 20-22, 29

Jurisdiction 5-- County: AA's 1-29

See APEX Analysis Area Map

ANNUAL WAGE

This is the annual cost to the Industrialist of one worker and is an average of the various rates of pay applicable to the different types of workers in the firm. The applicable average wage rate for each firm is reported in the Industrialist's printout each cycle under cost factors. This wage rate may be subject to negotiations with the labor representative and this new negotiated wage rate will supercede the rate found under cost factors on his printout.

ASSESSED VALUE

Assessed value is the value assigned to real estate property for purposes of assessing taxes owed to each of the jurisdiction County and school districts. Governments are required by law to maintain an assessed value of 50% of market value for propert in their jurisdiction, although this requirement is often not met. (E.g. if a residential property is valued on the market at $20,000, its assessed value is $10,000.) (See STATE EQUALIZED VALUE.)

BACKGROUND LEVEL

The amount of pollutants due to natural sources such as marsh, gas, pollen, conifer hydrocarbons and dust.

BOARD OF DIRECTORS

Each Industrialist acts as a Plant Manager and is responsible to the Board of Directors of his plant for his decisions and actions. The Board has the ultimate decision-making power in plant affairs and may approve, amend or reject the manager's fiscal policy proposal. The Board also sets the amount of dividends to be paid to the stockholders.

BONDING

Bonding is the process of incurring public debt to finance some capital improvement project. It is a device used to extend the incidence of costs over a long period of time, rather than have costs met out of current revenues while the project is under construction. Politicians may issue two kinds of bond general obligation bonds and revenue bonds. These differ in three respects: (1) the need for voter concurrence, (2) how they are paid off, and (3) the kinds of projects for which they are appropriate. Before Politicians may float general obligati bonds to finance projects, voters must approve this action in a referendum. There is a State-imposed limit on the indebtedne that a jurisdiction may incur through general obligation bonds. The amount of additional bonded indebtedness that can be sought is indicated in the Politician's output as "$ Limit on Next G.O. Bond Sought". (See DEBT RETIREMENT for the process of financin general obligation bonds.)

Revenue bonds are not submitted to a referendum and are appropr iate only for particular projects. (Projects for which they may be used are noted in the Project List.) They are paid off thro fees collected for the service provided by the facility, rather than by taxes.

CAPITAL PLANT INDEX (C.P.I.)

The capital plant index is a ratio of the present dollar value of public capital facilities (sewers, water lines, streets, parks and miscellaneous public holdings) to population equivalents. This number reflects the load imposed on facilities by residents, employees and clients, and this is considered an indication of the relative level of adequacy of these facilites. Present dollar value is calculated each cycle on the basis of depreciated value of existing facilities plus new facilites. (Facilities depreciate at about 5% of original value per year.) (See POPULATION EQUIVALENT.)

CASH CARRYOVER

This is the cash reserve which an Industrialist or Developer carries over to the next cycle after making all his expenditure including those for capital plant. It represents uncommited funds, which the player is free to use in the next cycle.

CASH TRANSFER

A cash transfer is used for loans or gifts of cash between players when the reason for the exchange is unspecified. Revenues made, or expenditures incurred, through an exchange of cash between either the Government, Industrialist, or Developer, are recorded in the budget section of their printout. When applicable, cash transfers are also used to cover the cost of television time and newspaper articles.

CLEAN AIR ACT AMENDMENTS OF 1970

(See LEGAL REFERENCE MANUAL.)

COLLECTION/DISPOSAL STUDY

Studies of municipal house-to-house refuse collection using combinations of different truck types, crew sizes, container locations, transfer stations and disposal sites to determine the capital and operating costs of alternative systems.

COLLOIDAL PARTICLES

Very fine particles of material in fluid suspension; particles will not settle out and can pass through a semipermeable membra

COMBUSTION

Combustion is the process of burning.

CONCENTRATION

Concentration is the ratio of pollutants to effluent gases or ambient air, measured in micrograms per cubic meter (MG/cubic meter) as a weight to volume ratio. Data on mean concentration per quarter, concentration on worst day, and number of days above a specified concentration can be obtained by the APCO, through the installation and operation of monitoring stations.

CONTAMINANT

(See POLLUTANT)

CONTROL EFFICIENCY

Control efficiency refers to the ratio of the amount of a pollutant removed from effluent gases by a control device to the total amount of pollutant without control.

CONTROL STRATEGY

A comprehensive plan designed to control or reduce the level of a pollutant or pollutants in the environment.

CONTROL SYSTEM

Control system refers to equipment and/or procedures intended to reduce the amount of a pollutant, or pollutants, in effluent gases. Each gamed industrial firm has a limited set of control system options for each production process and combustion process

DEBT RETIREMENT (Debt Service)

Debt retirement, or debt service, is a term used to describe the process of paying off long-term general obligation bonds sold by public agencies. Debt retirement is a budget category of the Politician which includes expenditures for both principal and interest on general obligation bonds. Financing of these expenditures may be with either normal millage or debt retirement millage.

DEMOLITION COSTS (Clearance Costs)

A demolition cost of 5% of the assessed value of developed PROPERTY must be paid when developed land is rezoned.

DENSITY

In residential areas, density is the term used to express the number of dwelling units per acre of land. In APEX County a different density is associated with each of the five residential development types, with the lowest density found in land use category R-1 and the highest in category M-2.

The table on the following page expresses housing density in housing units per acre, and in acres per housing unit.

DEPRECIATION ALLOWANCE

Each cycle, the total value of industrial capital facilities, (building and equipment) depreciates at 8%. A tax credit of 5% of the capital value of these facilities is allowed the Industrialist to compensate for this depreciation. The amount is deducted before Federal and State income taxes are paid. The Industrialist may claim any part of his maximum allowance; any portion of the allowance not taken will accumulate. The maximum depreciation allowance is listed under cost factors in the Industrialist's printout.

DEVELOPMENT TYPES AND COSTS

A. Residential

In APEX County there are various levels of cost and density associated with different qualities and sizes of housing which may be built by Developers. These costs are for structures, exclusive of land and site improvements.

Single Family
Three different development-cost levels are applicable to APEX County single-family housing units, ranging from the highest construction cost of $40,000 (designated as R-1) to the lowest cost housing, built at $15,000 per unit (designated as R-3). Any one of these types may be built on land which, when vacant, is zoned R.

Multiple Family
Units of two different cost levels, M-1 and M-2 are available for construction of multi-family housing in APEX County. The highest cost per unit, for M-1, is $30,000 and the lowest, for M-2, is $12,000. Either of these types may be constructed on vacant land zoned M.

Residential Development Costs Per Unit

R-1	R-2	R-3	M-1	M-2
$40,000	$22,500	$15,000	$30,000	$12,000

HOUSING DENSITY

AA	R-1		R-2		R-3		M-1		M-2	
	Units Per Acre	Acres Per Unit	Units Per Acre	Acres Per Unit	Units Per Acre	Acres Per Unit	Units Per Acre	Acres Per Unit	Units Per Acre	Acres Per Unit
1	1.4	.714	3.5	.286	5.6	.179	11.2	.089	21.0	.048
2	2.4	.410	6.0	.167	9.6	.104	19.2	.052	36.0	.028
3	2.0	.500	5.0	.200	8.0	.125	16.0	.063	30.0	.033
4	2.8	.357	7.0	.143	11.2	.089	22.4	.045	42.0	.024
5	2.1	.476	5.25	.190	8.4	.119	16.8	.060	31.5	.032
6	1.6	.625	4.0	.250	6.4	.156	12.8	.078	24.0	.042
7	2.5	.400	6.25	.160	10.0	.100	20.0	.050	37.5	.027
8	3.0	.333	7.5	.133	12.0	.083	24.0	.042	45.0	.022
9	1.2	.833	3.0	.333	4.8	.208	9.6	.104	18.0	.056
10	2.5	.400	6.25	.160	10.0	.100	20.0	.050	37.5	.027
11	1.0	1.000	2.5	.400	4.0	.250	8.0	.125	15.0	.067
12	1.0	1.000	2.5	.400	4.0	.250	8.0	.125	15.0	.067
13	1.0	1.000	2.5	.400	4.0	.250	8.0	.125	15.0	.067
14	.5	2.000	1.25	.800	2.0	.500	4.0	.250	7.5	.133
15	.6	1.667	1.5	.667	2.4	.417	4.8	.208	9.0	.111
16	.8	1.250	2.0	.500	3.2	.313	6.4	.156	12.0	.083
17	1.2	.833	3.0	.333	4.8	.208	9.6	.104	18.0	.056
18	2.3	.435	5.75	.174	9.2	.109	18.4	.054	34.5	.029
19	3.0	.333	7.5	.133	12.0	.083	24.0	.042	45.0	.022
20	.8	1.250	2.0	.500	3.2	.313	6.4	.156	12.0	.083
21	.5	2.000	1.25	.800	2.0	.500	4.0	.250	7.5	.133
22	.4	2.500	1.0	1.000	1.6	.625	3.2	.313	6.0	.167
23	.7	1.429	1.75	.571	2.8	.357	5.6	.179	10.5	.095
24	.3	3.333	.75	1.333	1.2	.833	2.4	.417	4.5	.222
25	.4	2.500	1.0	1.000	1.6	.625	3.2	.313	6.0	.167
26	.3	3.333	.75	1.333	1.2	.833	2.4	.417	4.5	.222
27	.6	1.667	1.5	.667	2.4	.417	4.8	.208	9.0	.111
28	.3	3.333	.75	1.333	1.2	.833	2.4	.417	4.5	.222
29	.5	2.000	1.25	.800	2.0	.500	4.0	.250	7.5	.133

B. Commercial

Two types of commercial land use are allowable in APEX County. These relate to local neighborhood shopping facilities and to regionally-oriented commercial and service facilities. Both may be built only on zoning category "Commercial" land. Each is developed on a cost-per-acre basis, as follows:

Commercial Development Costs by Type

CL	CR
$100,000	$125,000

C. Industrial

Endogenous industrial development permitted Developers in APEX County is on a per-acre basis, the cost being $100,000 per acre. Zoning category I land may be developed into this land use.

(See ZONING CATEGORY.)

DOSAGE

The accumulated exposure of a person, plant, materials, etc., to a particular concentration of pollutant for a specified period of time.

DUMP

A site where uncontrolled disposal of solid waste occurs.

EFFLUENT

An effluent is a gaseous or liquid discharge or emission.

EFFLUENT SAMPLES

An effluent sample is an industrial outflow water sample and analysis which provides data on seven water pollutant parameters. A sample may be ordered by the Water Quality Manager and is taken at the source specified by the WQM.

ELITE OPINION POLL (E.O.P.)

The Elite Opinion Poll calls for a vote of all game players on certain major policy issues in the community. These issues appear as headlines in the METRO-APEX NEWS, which ask for either a deciding or advisory vote. The results of the Poll affect public officials' chances of reelection, as well as the probability of passage of general referenda, specific bond issues and special millage requests.

EMERGENCY EPISODE

An air pollution incident in which high concentration of pollutant(s) occur in the ambient air contributing to a significant increase in illness or death.

EMISSIONS

Emissions are pollutants in effluent or exhaust gases which are released into the air.

EMISSION FACTORS

Emission factors are estimates which can be used to approximate the rate of emissions of specific pollutants from generalized sources.

EMISSION INVENTORY

A compilation of the rate of pollution emissions in a given area by source type.

EMISSION MEASUREMENT

Air pollution emissions are measured in pounds per hour for particulates, sulfur dioxide (SO2), carbon monoxide (CO), nitrogen oxides (NOx), and hydrocarbons (HC); in Ringelmann number for smoke; and in Stinkelmann number for odor. The emissions measured are of specific pollutants from specific sources.

EMISSION RATE

Emission rate refers to the amount of pollutant emitted per unit of time or throughput. Maximum allowable emissions will be specified in pounds per hour (or pounds per 1000 pounds of process rate) if they refer to emission rates.

EMISSIONS SOURCE

An emission source is the origin of some specific air pollutants. In the game there are several gamed point sources, about thirty non-gamed point sources, plus motor vehicles and space heating as line and area sources, respectively.

ENVIRONMENTAL IMPACT STATEMENT

The results of a study which identifies and evaluates the adverse or beneficial environmental effects of pursuing a proposed action, pursuing an alternative action or not pursuing the proposed action.

EXOFIRM (EXOGENOUS FIRM)

An Exofirm is an industry or bureaucratic firm that depends primarily upon markets outside the local area for its growth and vitality. These firms are usually classified as Exofirms on the basis of their being net importers of dollars and net exporters of products or services to these outside markets. Jobs created by Exofirm growth spur additional growth of households and jobs oriented to the local market. (Exofirms are also often referred to as basic firms).
In APEX County, Exofirms locate in industrial and office zoning categories. Periodically, the newspaper will note the opportunity for Developers or Industrialists to invest, in a speculative way, in the entry of new Exofirms into the metropolitan area, with a variable probability of success attached to such investments. Occasionally, these Exofirms require rezoning of land and/or installation of special capital improvements. Requirements for such special public action and requests for private investment will be noted in the newspaper announcement of the firm's interest in locating in the area.

FEDERAL WATER POLLUTION CONTROL ACT AMENDMENTS OF 1972

(See LEGAL REFERENCE MANUAL)

FUEL RATE

The amount of fuel consumed by each industry per unit of time is specified in tons/hours for coal, in barrels (bbl)/hour for oil, in thousand cubic feed (MCF)/hour for natural gas, and in megawatts (MW) for electricity.

FUEL TYPE

The fuel types for industry include: low-grade coal (Lo-Coal), high-grade coal (Hi-Coal), low grade oil (Lo-Oil), high-grade oil (Hi-Oil), natural gas, and electricity.
The fuel option for each plant is listed in the Industrialist's printout. The fuel grade refers inversely to the air pollution potential of the burining fuel, i.e., Lo-Grade has higher pollution potential, and Hi-Grade fuels have low pollution potential.

GARBAGE

The food waste portion of solid waste.

HAZARDOUS AIR POLLUTANTS

Air pollutants not covered by the Air Quality Standards but which, in EPA's judgement, "may cause, or contribute to, an increase in mortality or --- serious illness." These pollutants generally are toxic substances such as mercury, cadmium, asbestos and beryllium.

HAZARDOUS WASTE

(See "SOLID WASTE TYPE")

HOUSEHOLD/COMMERCIAL REFUSE

(See "SOLID WASTE TYPE")

HOUSEHOLD TYPES

The five household types used in APEX County are characterizations of families belonging to fairly homogeneous socio-economic groups. These characterizations reflect life style, political involvement and voting habits, general consumption behavior and preference for public goods. There is substantial overlap of income levels for all status groupings; hence income, alone, is a weak indicator for characterizing households.

Household Type 1 -- is upper class and upper-middle class combined. Occupations of the heads of households are: professionals, technical workers, managers, officials, and proprietors. One-half of the family income levels are in excess of $15,000 and the other half are in the $10,000-$15,000 range. Value of housing is in excess of $20,000, and if they rent, rentals are over $150 per month. This is the group which is most concentrated in residential locations. Education of the head of the household is at least college graduate, often with post-graduate study. Interest group membership for this household type is found in the Business Community and Effective Government Groups.

Household Type II -- is the typical middle-class household in which the head of households occupation is clerical, sales, or kindred types. Income of the family is primarily in the $7,000-$10,000 range. Education of the head of the household is some college or at least high school graduation.

Housing value is primarily in the $15,000-$25,000 range, and gross rentals would usually be from $100 to $149 per month, though they may be somewhat lower. Interest group affiliations for this type are with the Effective Government Groups on the one hand, and with the Right-wing Conservatives on the other.

Household Type III -- the most numerous and widely-distributed of the five types is characterized by a mixed membership of very low income white collar workers, skilled craftsmen, and foremen, though the latter two predominate. In the outlying areas, farmers fall into this category. Family income is primarily in the $5,000-$9,000 range. The head of the household's education is typically high school graduation. Housing value is usually in the $12,000-$20,000 range and rentals are from $80-$125 per month. Members of this group are apt to belong to the Labor Vote and/or the Right-wing Conservative interest groups.

Household Type IV -- is composed of semi-skilled workers, industry operatives and non-household service workers, such as waiters, barbers and parking-lot attendants. Family income is in the lower portion of the $4,000-$7,000 range. Housing values range from $10,000 to $14,000 with gross rentals being $70 to $90 per month. Education of the head of the household is usually 9 to 11 years. Interest group membership for this household type is found in the Labor Vote and among the Civil Rights Groups.

Household Type V -- is the lowest stratum of society, and heads of households are laborers or household service workers. The vast majority of the area's unemployment are of this type and roughly half of all members are elderly and retired. Family income is less than $5,000 annually and the value of housing is less than $10,000, with rentals primarily $50-$75 per month. Heads of households have usually not been educated beyond the eigth grade. Membership in interest groups is found in the Labor Vote and Civil Rights Groups.

Political involvement of the five household types declines from Type I (the highest) to Type V, the latter being generally apathetic. Likewise, concern with government operation and provision of public services is highest in Type I households and declines steadily through Type V families.

The five household types will tend to demand housing of the five residential development types according to the following percentages:

Household Type I -- 50% will choose R-1; 30% R-2 and 20% M-1

Household Type II -- 20% will choose housing in each of the five development types

Household Type III -- 10% prefer R-1; 30% prefer R-2; 20% choose R-3; 25% take M-1, and 15% M-2

Household Type IV -- 20% will choose R-2; 40% R-3; 10% M-1, and 30% M-2

Household Type V -- 40% will be in R-3; 60% in M-2

IMPLEMENTATION PLAN

Under the 1970 Clean Air Act, each state must prepare and have approved by EPA an Implementation Plan which details the methods, strategies and timetable which the state and its jurisdictions will employ to meet and maintain the Air Quality Standards within the control region(s) within its jurisdiction.

IMPROVEMENT COSTS

Improvement costs are fees to prepare raw land for development, including subdivision costs, sewer and water connecttions, drainage and engineering. Developers are required to pay improvement costs on all land on which they build structures. For residential property, improvement costs are on a per unit basis as follows:

R-1	R-2	R-3	M-1	M-2
$1,000	$800	$700	$600	$400

For commercial and local industrial land uses, improvement costs are on a per acre basis; for each the fee is $5,000 per acre.

These fees are automatically applied to all land on which the Developer builds.

INTEREST GROUPS

In APEX County there are 5 major political interest groups that take stands on public policy issues and have a significant impact upon voting behavior. The more extreme the position assumed by one of these interest groups (as indicated on a scale of +4 to -4), the greater will be the voter turnout surrounding any particular referenda or election. Each of these interest groups derive their constituency from among two or more of the "Household Types" (See HOUSEHOLD TYPES)

1. CIVIL RIGHTS GROUPS: The orientation of these groups is primarily towards issues such as fair employment, neighborhood improvement, and problems that affect minorities. Their leadership is drawn from the elite liberals or the ghetto activists, their membership from the lower social strata. Their mode of operation is typically public protest and demonstrations centered around a very specific policy issue or community problem, and their influence on the system as a whole is moderate.

2. EFFECTIVE GOVERNMENT GROUPS: Are overwhelmingly middle class, composed primarily of professional people, a large percentage of them women. These groups are interested in a wide range of issues, on which they exert moderate influence. their orientation is towards governmental efficiency and towards community growth and image.

3. BUSINESS COMMUNITY: Draws from the whole range of commercial and mercantile interests, as well as some from the professional areas such as law, engineering and medicine. The business community exerts the highest degree of power of all politically oriented interest groups; their interest is directed primarily at community image, growth, and "BOOSTERISM".

4. LABOR VOTE: Are more conservative locally than nationally and exhibit some divergency between craft unions and industrial unions, the former being more conservative. The labor vote exert moderate influence on a range of issues somewhat less broad than those of interest to the "Effective Government Groups". The conservatism of the labor vote is especially apparent in the opposition of some of its constituency to public spending for social welfare.

5. RIGHT-WING CONSERVATIVES: Draws its membership primarily from people who resist change and advocate conserving the "traditions of Americanism--God and Country." They are generally against social change, increases in government influence in local affairs and public spending on social programs. Since these groups do not advocate change, they usually only become actively involved in public issues as a reaction to public programs proposed by other groups.

INTEREST RATE

The cost of borrowing money will vary for the Industrialists and Developers according to both their credit rating and the length of the loan, i.e., how many years will be taken to repay it. The maximum number of years on any loan by an Industrialist or Developer is 20 years. Applicable interest rates as follows:

Years to Repay	Credit Rating		
	A-1	A-2	A-3
1-2	4%	6%	8%
3-5	6%	8%	12%
6-10	8%	12%	16%
11-20	12%	16%	20%

The cost of borrowing money for governmental agencies, the interest rate on bonds, will vary according to the credit rating of the jurisdiction, and will differ between general obligation and revenue bonds. Since revenue bonds are not backed by governmental taxing power they are riskier and therefore carry higher interest rates than general obligation bonds. As a jurisdiction's credit rating falls from A-1 to A-3, the interest rate on general obligation bonds will increase from 4.5% to 6%.

INVERSION

A layer of air trapped near the ground by a layer of warmer air above it.

ISSUE

Issue is used to refer to a problem situation presented to players in the METRO-APEX NEWS. Following each issue are two to four alternatives one of which must be selected by the player.

(See ELITE OPINION POLL)

JURISDICTION

Jurisdiction refers to one of the political units in APEX County. Abbreviations used in the game are:

(Jurisdiction 1) CC - Central City
(Jurisdiction 2) SUB - Suburb
(Jurisdiction 3) TW 1 - Township 1
(Jurisdiction 4) TW 2 - Township 2
(Jurisdiction 5) Co - County

(See ANALYSIS AREA.)

LAND USE

Land use is a term used to refer to the spatial distribution of City and rural functions--its residential communities or living areas, its industrial, commercial and retail business districts or major work areas and its agricultural, institutional and leisure time functions.

(See DEVELOPMENT TYPE and ZONING CATEGORY.)

LEACHATE

Water moving vertically through the soil of a landfill that may become contaiminated from the waste material in the fill.

MAXIMUM PRODUCTION CAPACITY

This is the maximum number of units which can be produced by a gamed industry in a cycle, with the plant and equipment in existence during that cycle. Maximum capacity may be increased by making capital expenditures for building and equipment. New productive capacity becomes available only in the cycle following that in which money is budgeted for plant expansion.

MEAN PROBABLE NUMBER PER 100 ml (MPN/100 ml)

A measure of the amount of coliform organisms per unit volume. By using quantities of sample varying in geometric series i.e., 0.01, 0.1, 1.0 milliliters, and by applying the usual test for coliform organisms, it is possible to determine a statistical estimate or "most probable number" of coliform organisms per 100 ml of water.

MICROGRAMS PER CUBIC METER

The weight of a substance in 1/1,000,000 of a gram contained in one cubic meter of volume.

MILLAGE

Millage is the tax rate, in mills, which is applied to State equalized property value to generate property tax revenue. One mill is equal to a $1 charge on each $1000 of value, or one tenth of one percent of the State equalized value. There are three types of millage:

A. Normal Operating Millage is determined by local Politicians and is applied to standard operating costs of government by State and local law -- the local limit can never be higher than the limit set by the State.

B. Special Millage, which is not subject to State and local limits, can be used for financing special programs. It must be voted and passed on in a referendum.

C. Debt Retirement Millage is not subject to the State and local limits but it can be used for retiring general obligation bonds. This millage requires a favorable vote in a referendum.

Total millage is the sum of operating millage, any special millages and the debt retirement millages which may be in effect during the year.

MILLIGRAMS PER LITER (mg/1)

Weight per unit volume. For water effluents, milligrams per liter is used to express the concentration in terms of the weight in milligrams of a dissolved or suspended pollutant in one liter of water.

MONITORING STATION

A monitoring station is a facility that houses air quality monitoring equipment for measurement of ambient air quality. One air quality monitoring station may be installed and operated in any analysis area. The pollutants measured at each monitoring station are:

Particulates, SO2, CO, NOx, and Hydrocarbons

Each pollutant is measured by a different type of monitoring equipment.

(See AIR QUALITY)

NATIONAL AMBIENT AIR QUALITY STANDARDS

EPA has set Primary and Secondary Air Quality Standards which are the maximum concentration of air pollutants allowable by federal law. Primary Standards are based on protection of the public health and are to be achieved as a first priority. Secondary Standards are based on the public welfare and will be achieved as a second priority.

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)

(See LEGAL REFERENCE MANUAL)

OFF GASSES

Gasses arising from landfills or other solid waste conversion (such as thermal) operations and leaving the site of generation.

PLANNED UNIT DEVELOPMENT

A planned unit development is an allocation of density to a development site such that the overall density meets the zoning requirements, but within the site certain areas may be of a higher concentration than those other developments around this site. This allows the Developer more flexibility in designing planned neighborhoods.

(See DENSITY)

PLANT INSPECTION

A plant inspection is an "on-site" examination of production and pollution control equipment, processes and procedures. Plant inspections ordered by the APCO will provide him with information on the production processes; production capacity; fuel and process rates; control systems; smoke code (Ringelmann number); and odor code (Stinkelmann number) for each process of a specific gamed or non-gamed emission source.

PLANT MANAGER

The player in the role of Industrialist is acting as a Plant Manager.

(See BOARD OF DIRECTORS.)

POLLUTANTS

Air Pollution:

(1) Particulates: particulate matter is any material (except uncombined water) which exists in a finely divided form as a liquid or solid at standard conditions.

(2) Sulfur Dioxide (SO2) is a pungent colorless gas which is commonly emitted from the combustion of sulfur containing compounds, especially fuels such as coal and fuel oil. Sulfur dioxide can also be emitted from chemical process plants, metal process plants and trash burning incinerators.

(3) Carbon Monoxide (CO) is a colorless, odorless, very toxic gaseous product of the incomplete combustion of common fuels. It can also be generated by metabolic processes and the partial oxidation of carbon-containing compounds such as limestone. Carbon monoxide adversely affects human respiration by interferring with the body's ability to assimilate oxygen.

(4) Oxides of Nitrogen (NOx) are formed when oxygen and nitrogen are heated to a high temperature. Sufficiently high temperatures to produce significant amounts of NOx are normally only reached in modern efficient combustion processes such as electric power plants and automobile engines. Oxides of nitrogen in combination with hydrocarbons and sunlight are major constituents of photochemical smog.

(5) Hydrocarbons (HC) are compounds containing combinations of hydrogen and carbon. Gaseous hydrocarbon air pollutants are most commonly emitted from the incomplete combusion of fuels such as gasoline, coal, oil and gas from the production, handling and evaporation of gasoline, paint thinners, solvents, etc. Hydrocarbons along with oxides of nitrogen and sunlight are important in the generation of photochemical smog.

Water Pollution:

(1) Biological Oxygen Demand - B.O.D. is the amount of oxygen needed by any polluted water or sewage to allow micro-organizms to consume the suspended and dissolved biodegradable organic material found in the liquid under aerobic conditions.

(2) Coliform Bacteria - Micro-organisms found in sewage serving as the indicator of bacterial contamination in water quality.

(3) Dissolved Oxygen (D.O.) is the amount of oxygen found and available for biochemical activity with a given volume of water (mg./l.). The saturation point is dependent upon temperature, chemical characteristics of the water, and barometric pressure.

(4) Nutrients - Nutrients are phospates, nitrates, nitrogen and phosphorus released as waste from certain industries or produced from agricultural and urban runoff.

(5) Thermal Pollution - The increase in temperature of surface waters as a result of the use of these

waters for cooling purposes by industry or public facilities. The heat accelerates biological processes in the stream, resulting in reduction of oxygen content of the water.

(6) Total Dissolved Solids (T.D.S.) - The amount of solids, dissolved in a given volume of water (mg./l).

POPULATION EQUIVALENT

The population equivalent is a means of converting (a) residents, and (b) employees and clients of industries and commercial facilities into a standard measure of the demand placed on such public capital facilities as sewers, streets, and water supply. The population equivalent of an area (analysis area or jurisdiction) is computed as follows:

P.E.= [Total households]+[.8 x all employees of commerce and industry]

For use of population equivalents in APEX County, see CAPITAL PLANT INDEX.

PROCESS RATE

Process rate refers to the amount of materials processed by an Industrialist per unit time. The measure is specified in tons, pounds, barrels, per minute, per hour, etc.

PRODUCTION LEVEL

This is probably the key item determined by an Industrialist each cycle. It is the number of units of a product his plant will produce in that cycle. The Industrialist is free to set his production at any level he chooses, as long as the figure he sets does not exceed his maximum production capacity.

PRODUCTION PROCESS

A production process is a definable part of the overall production system of a given firm. Each gamed industrial firm may have up to five production processes, while each non-gamed industrial firm is assumed to have only one process.

PROMPT SCRAP

Wastes that are recycled for direct reuse without entering the solid waste stream.

QUASI-PUBLIC LAND

This is land owned by tax-exempt organizations such as churches and fraternal organizations. Such land includes church buildings and schools, cemeteries and such miscellaneous buildings as Elks lodges, etc.

REACH

A reach is a generally homogeneous segment of a river or stream. Often in water quality management typical measurements of water quality from any point in the reach are used as representative of the entire reach.

REFERENDUM

A referendum is a vote of the (simulated) population of a jurisdiction on some issue presented to the people by the Politician. Most usually referenda are called to approve (or reject) a general obligation bond issue or a request for special millage, although they may be called to approve some legislative matter, such as open housing.

REFUSE

A term applied broadly to mixed solid waste including food waste, trash, street sweepings, and non-toxic solid industrial wastes.

REZONING APPLICATION FEE

The rezoning application fee is a charge of $100, which is assessed for each rezoning request submitted by a Developer or Industrialist. It is included in that player's financial statement for the next cycle.

RINGELMANN NUMBER

The Ringelmann Number is a scale for measuring the blackness of smoke fumes and is equivalent to the opacity. Ringelmann Numbers and opacities are used for specifying allowable smoke emissions (Ringelmann for black and opacity for other colors). #0 = zero opacity #1 = 20%, #2 = 40%, #3 = 60%, #4 = 80%, #5 = 100%. In APEX County, all smoke readings are reported as Ringelmann Numbers.

SALVAGE

The recovery for reuse of any valuable component from the solid waste stream.

SANITARY LANDFILL

An operation where solid waste is deposited in the ground in a controlled manner. The waste is compacted when delivered and covered daily. APEX County can have three classes of sanitary land fills. (See below.)

SANITARY LANDFILL--Class I

A site where disposal of toxic or hazardous industrial waste (solid waste type 1) is permitted due to the geology and soil characteristics. Solid waste type 2 and 3 may be deposited in this class site.

SANITARY LANDFILL--Class II

A site where only non-toxic or non-hazardous waste may be deposited. These sites receive primarily mixed municipal refuse (solid waste type 2). Solid waste type 3 may also be deposited in this class site.

SANITARY LANDFILL--Class III

A site where only solid fill (solid waste type 3) may be deposited.

SEWAGE TREATMENT LEVELS

Primary Treatment - A series of mechanical treatment processes including screening and sedimentation, which removes most of the floations and suspended solids found in sewage, but which have a limited effect on colloidal and dissolved material.

Secondary Treatment - A series of biochemical, chemical, and/or mechanical processes which remove, oxidize or stabilize nonsetteable, colloidal, and dissolved organic matter following primary treatment.

Tertiary Treatment - Any sewage treatment process that has the capability to remove over ninty-nine percent of the pollutants in sewage if it follows secondary treatment.

SOIL PERMEABILITY

A measurement of the water porosity of soil; soil porosity measured in gallons per day of water which will be absorbed by one square foot of soil surface.

SOIL SURVEY

An engineering/geological survey of an analysis area which provides data on the water table level, soil type, and soil permeability. These parameters are important criteria to determine the suitability of an A.A. for Class I, II, or III sanitary land fills.

SOIL TYPE

Three predominent soil types are found in APEX County--clay, sand or gravel.

SOLID WASTE

Any waste that can be handled as a solid rather than a liquid.

SOLID WASTE DISPOSAL

The end point of solid waste handling; may include open dumps, sanitary land fills, incinerators, composting, hauling out of APEX County by contract, salvage and recycle, etc.

SOLID WASTE SOURCES

Solid wastes are generated from various sources as --

Household - Solid wastes from residences.

Commercial - Solid wastes derived from non-industrial commercial operation.

Industrial - Wastes produced as a result of manufacturing or related industrial operation.

Municipal - Mixed Household and Commercial waste that may contain some street cleaning wastes and industrial solid wastes.

Agricultural - Wastes derived from basic crop or animal operation including waste vegetables, minerals and animal manure.

SOLID WASTE TYPE

APEX County solid wastes are specified as one of three following types--

S.W. Type 1 - Hazardous Wastes; includes sewage sludge, pesticides, industrial chemicals, etc., (Only small quantities of high toxic wastes and radioactive wastes are generated in APEX County and these are not included in Type 1 wastes.)

S.W. Type 2 - Household/Commercial Refuse; includes trash, rubbish, garbage and decomposable organic refuse from commercial and household operations picked up by regular route collection.

S.W. Type 3 - Solid Fill; includes bulky non-water soluable, non-decomposable inert sclids from municipal and industrial operations, demolition, etc. Examples are earth, rock, gravel, concrete, asphalt paving fragments, clay, glass, and rubber products.

Industrial wastes are distributed among the above three categories depending upon the characteristics of the particular waste.

SOURCE TYPES (AIR POLLUTION)

Point Source - A stationary source of pollution which has the potential of emitting a substantial amount of pollutant(s) such as a factory or power plant.

Line Source - A moving source of pollutants such as automobiles, buses, trains, and aircraft.

Area Sources - The sum of numerous widespread small stationary pollution sources as the space heaters in buildings.

Indirect or Complex Source - Stationary facilities or developments which indirectly generate substantial pollution by means of activity associated with them (such as vehicle traffic generated by shopping centers, sports complexes, airports, etc.)

STANDARDS OF PERFORMANCE

Direct limitations of pollutant emissions from certain types of high pollution sources (power plants, etc.) set by EPA and/or the states.

STATE EQUALIZED VALUE

State equalization is a process designed to even out differences in assessment practices among political jurisdictions. The state equalization factor applied to each jurisdiction's assessed value may thus be different. The state equalized value for a jurisdiction, reached by applying the factor to local assessed value, is the base on which millage is levied to generate property tax revenues.

STINKELMANN NUMBER

The Stinkelmann Number is a scale (developed in APEX County) for measuring odor emissions, and for specifying maximum allowable odor emissions. Numbers range from 0-5, covering least to worst odor levels, respectively.

TAX RATE

See MILLAGE

TRANSFER STATION

Site at which wastes are transferred from small compacter vehicles to larger long distance transport vehicles.

TRASH

The non-food, non-putrescible fraction of solid waste.

UNIT COSTS

The costs to the Industrialist of operating his plant are calculated, for each production component, except labor, on the basis of the amount and cost of each component required to produce one unit of the product. These unit costs apply to fuel, administrative overhead, inventory, and raw materials.

Fuel Cost applies to the fuel required to produce each Industrialist's product and will be different for each fuel type.

General Administrative Costs include all overhead expenditures, other than salaries, involved in production.

Inventory Carrying Costs must be paid to store product inventory from one cycle to the next. This cost excludes taxes on inventory.

Materials Costs include all raw materials required to produce the product, except fuel.

The unit costs for each of these components which are applicable for a particular Industrialist for the next year are included in that player's output.

UNIT SALES PRICE

This is the price, which an Industrialist sets each cycle, at which he will sell a unit of his product. Each Industrialist except the power plant has complete control over price; although the number of units he actually sells will be dependent on the relationship of his price to supply-demand conditions in the general market, and to the current average industry-wide price (reported for the last three years in the Industrialist's output).

WATER QUALITY SAMPLES

A water quality sample is a water sample and analysis providing data on seven water pollutant parameters. The water quality manager may order water samples and designate the location from which they are to be taken.

WATER TABLE LEVEL

The distance from the surface of the ground to the underlying ground water level.

ZONING CATEGORY

Zoning categories apply only to vacant land for APEX County. Each of the six zoning categories may be developed into one or more types of land use:

FROM	TO
Zoning Category	Developed Land use Type(s)
(1) R - Single-family residential	(1) R-1 (low density, high cost)
	(2) R-2 (med. density, med. cost)
	(3) R-3 (high density, low cost)
(2) M - Multiple-family residential	(4) M-1 (low density, high cost)
	(5) M-2 (med. density, low cost)
(3) C - Commercial	(6) CL (Commercial-Local)
	(7) CR (Commercial-Regional)
(4) I - Industrial	(8) IL (Local industry)
	(9) IX (Exogenous industry)
(5) O - Office	(10) O (Exogenous office)
(6) A - Agricultural	(11) A (Active farming)

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CHAPTER 3

Chapter 3

THE APEX COUNTY LEGAL SYSTEM

The APEX County Legal system consists of a body of laws, a court system and legal officials. This legal system is designed to provide justice for all of the citizens of APEX County and consists of a system under which all disputes and grievances, civil and criminal, can be fairly settled.

Part I - Laws, Courts, and Legal Officials

A. There are two classifications of laws in APEX County, (1) Civil Laws which are punishable by the awarding of damages to the plaintiff and (2) Criminal Laws which are punishable by the imposing of a fine or by imprisonment or by both. Under the APEX County Legal System there are Civil offenses which include Slander, Libel, Breach of Contract, and loss or injury due to the unlawful act of Negligence. Criminal offenses include violation of Election Law, Usury Law, Bribery Law, and the committing of Fraud or Conspiracy. Contempt of Court and Perjury also are criminal offenses.

Violations of Federal, State, or local environmental, housing, civil rights, land use or zoning Acts, or inappropriate expenditure of money granted under these Acts may be Criminal or Civil offenses depending on the specification of offenses written into each particular Act. (See Chapters

1. Slander Law

No person shall bring public hatred, disgrace, ridicule, or contempt, or cause to be excluded from society, another person, through the use of falsely spoken and injurious words or statements.

2. Libel Law

No person shall bring public hatred, disgrace, ridicule, or contempt, or cause to be excluded from society, another person, through the use of false, injurious, or unjustified written or printed matter.

3. Loss or Injury due to Negligence

Any person who has suffered loss or injury because of the unlawful act of negligence of another person may recover monetary compensation or damages in a civil court suit. General damages include compensation for physical injury, physical pain, and mental anguish. Special damages usually consist of reasonable amounts spent for hospital, medical, repair, replacement, and related services.

4. Election Law

In APEX County it is against the election laws to:

a. Use public funds or public employees to assist in running for a public office;

b. Promise public appointments to secure assistance in an election;

c. Bribe a voter;

d. Falsify any ballot or election return;

e. Offer or accept campaign contributions from other than an individual. Elected officials and judges may be recalled from office upon a majority vote of the electorate. A recall election will be held if 2/3 of the "participating citizens" (i.e., game players) call for such an election by signing a formal petition to recall.

Additional election laws or election codes may be adopted by the County of APEX providing they are not in conflict with State or Federal law or the Constitution of the United States.

5. Usury Law

No person shall charge to another person for the use or loan of money, an interest rate greater than that specified in this statute (i.e., see the interest table in the GLOSSARY OF THE ROLE MANUALS).

6. Bribery Law

No person shall offer, give, receive, or solicit anything of value to or from another person with the corrupt intent of:

a. Obtaining the passive or active corroboration of the person in violating a law of APEX County;

b. Influencing a person holding public office to incline him to act contrary to his duty and the known rules of honesty and integrity;

c. Influencing the decision of a jury member's actions in carrying out his legal duties or rights.

7. Fraud

No person shall make a false representation of fact, whether by words or by conduct, which deceives and is intended to deceive another so that he shall act upon it to his legal injury.

8. Conspiracy Law

No two or more persons shall make an agreement to commit a crime. Any and all of the conspirators who share in the intention to accomplish a criminal act by concerted action, even though the criminal act is never attempted or accomplished, are guilty of the crime of conspiracy.

9. Contempt of Court

No person shall commit an act which is meant to embarrass the court, lessen its authority or dignity, interrupt its proceedings, or which constitutes a refusal to comply with an order of the court.

10. Perjury

No pesson shall deliberately make a false statement under oath. No person shall suborn perjury by soliciting or inducing another person to commit perjury.

B. The Court System

The APEX County District Court is a trial court of general jurisdiction, which has authority to try all types of cases, both civil and criminal.

The APEX County District Court is presided over by one judge*, who may:

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* See Section C on APEX County Legal Officials.

1. Approve requests for subpoenas and summonses;
2. Schedule trials and hearings by specifying date, time, and place;
3. Convene the court to hear all cases brought before it as a result of petition or complaint filed by a private citizen, the District Attorney*, or any other agency, group, or institution;
4. Impanel, swear, and instruct a jury or fulfill the duties of a jury in non-jury trials;
5. Pass sentence and specify penalties;
6. Declare persons "in contempt of court" and establish penalty therefor.

The APEX County Court of Appeals is the court of last resort for review of the actions of the lower judicial tribunal— the APEX County District Court.

The Court of Appeals is presided over by one judge* who may convene the court to carry out its purpose of judicial review and consideration of appeals at the request of dissatisfied litigants. The court does not retry a case but merely reviews the record of lower court proceedings to determine if there were errors in procedure or application of law. The Court of Appeals may also issue writ of mandamus to order the lower Court, a public or private corporation, or an official thereof, to perform some official action which the person, court, or body should have performed but failed or refused to perform. This writ is used to protect the public and individuals against exploitation and abuse caused by official inaction.

C. APEX County Legal Officials

APEX County legal officials normally consist of a County District Court Judge, a Court of Appeals Judge, and a District Attorney.

When these roles are required, the Game Director will act as or appoint someone to act as a Judge or Attorney. Designated members of a County or City Agency such as a member of the Environmental Quality Agency, the Air Pollution Control Office, etc., may be chosen to fulfill the function of the District Attorney in cases involving action sought by or against his particular agency.

* See Section C on APEX County Legal Officials.

Defense Attorneys in cases brought to hearing or trial may be chosen by the defendant at the discretion of the Game Director. If any other officials are required in the course of a game, the Game Director will see that these officials are supplied.

Part II - Preparing a Case for Court

A. Trial Procedure

If the control officer decides that legal action is necessary to obtain compliance, the accused must be served with a summons to appear before the court. If he does not appear, a warrant for his arrest may be requested from the court.

1. Summons, Warrant, Arraignment and Plea

a. Summons

A summons i.e., a written notice to appear, may be issued upon the sworn complaint of an appropriate law enforcement official. Once this is served upon the accused, he is required to appear before the appropriate agency to respond to the sworn statement of the officer. The summons informs the accused of the time and date to appear and the charges being made.

b. Warrant

A person may be arrested by filing a complaint before a judge showing probable cause for the arrest. The complaint is a sworn statement by a law enforcement officer setting forth the facts constituting the essential elements of the offense charged and the accused's responsibility therefor. These facts may be based on the officer's own observations or on hearsay information.

If the judge finds probable cause from the complaint, he issues a warrant for arrest describing the offense charged and the name of the accused. The warrant is then served by any peace officer within the jurisdiction and the accused is taken into custody.

c. Arraignment

An arraignment is a court hearing required whenever a summons or warrant is filed against a person. The purpose of this hearing is to inform the defendant of the charges against him and to give him the opportunity to plead. If charged with a felony, he must appear personally.

At the arraignment, the accused is informed of his constitutional rights, the complaint is read and a copy is handed to him, and he is asked to plead and state whether or not he wants a trial by jury.

d. Pleas

1. Not guilty

A plea which denies every material charge of the complaint and which automatically raises every possible defense.

2. Nolo contendere

A plea of guilty in the particular offense with the consent of the prosecution which cannot be used as an admission in any subsequent civil proceeding growing out of the offense.

3. Guilty

An unequivocal and knowledgeable admission of all the material charges of the complaint which must be made voluntarily and understandingly.

2. Pretrial Disclosure

Pretrial disclosure includes the time of occurrence and the purpose.

The rules of disclosure include:

a. Any client has the privilege to refuse to disclose or to prevent his attorney from disclosing any confidential communication made between him and his attorney in the course of their relationship.

    1. Where the client is a corporation, this privilege extends to any employee regarding communications relating to his performance of the duties of his employment.

    2. The communication had to be made in connection with the attorney's legal capacity and for the purpose of securing a legal opinion or legal services.

3. The privilege belongs to the client although the attorney can assert it in his behalf. Thus, if a client consents to disclosure and waives the privilege, the attorney has no privilege.

4. There must be a communication, i.e. an expression intended to convey a specific meaning, between the client and the attorney. Thus, an attorney's observations of his client's mental or physical condition are not within the privilege nor is the identity of his client.

5. The communication must have been made outside the presence of strangers and must be of a type which is reasonably expected to be kept secret.

b. There is no privilege where communications are made to enable the client or attorney to perpetrate a proposed crime or fraud; or where an attorney represents both parties to a transaction; or where an issue is raised as to an attorney's integrity or authority.

c. Since the privilege belongs to the client and not the attorney, improper disclosures by the attorney do not "waive" the privilege.

d. An attorney has a right of privacy as to the research memoranda, correspondence, briefs, reports from investigators, etc., assembled by him in preparation of his case. Such "work product" is not subject to discovery by his opponent unless good cause is shown for the production, i.e. withholding such information would unfairly prejudice the adversary.

3. Order of Courtroom Presentations

A brief sketch of the order of presentations to be followed at the trial is provided below:

a. Opening Statement - Prosecution

b. Opening Statement - Defense

The purpose of the opening statement is to outline and highlight the case which will be developed from the testimony of the witnesses and the introduction of the evidence (reports, data, etc.)

c. Witnesses - Prosecution

d. Witnesses - Defense

The prosecution will have the opportunity to present its complete case before the defense and may call its first witnesses. The prosecution may use technical experts and citizens as witnesses. The defense may ask questions (cross examine) of these witnesses. The defense witnesses may refute or disagree with statements made by earlier witnesses.

e. Closing Statement - Prosecution

f. Closing Statement - Defense

The closing statements should summarize the testimony of the witnesses and be designed to convince the jury, or judge sitting without a jury, to decide the case in a favorable way.

4. Rules of Evidence

a. Testimonial evidence: Testimony from witnesses is presented by placing a witness on the stand, having the witness sworn, and then asking him a series of questions. The answers of the witness must be responsive to the question asked or they can be stricken (removed from the record).

b. Real evidence (bullets, knives) and documentary evidence (writings, documents) are presented by the party wishing to introduce it and by having it marked for identification. Next it must be shown to the opposing counsel for his inspection. Then it must be authenticated, i.e., there must be testimony by a witness to identify the object. After authentication, the proponent makes a motion to have the item received into evidence at which time the adversary party may make whatever objections are available.

c. Each party bears the burden of proof, i.e., it is his responsibility to introduce all evidence which is essential to his case. Generally, whatever facts a party charges in his complaint, he has the burden of proving.

5. Rules for Objections with Examples

a. Each objection must be directed to particular evidence (i.e. a part of a writing), it must state a specific ground (i.e. hearsay or a privilege), and it must be timely (i.e. before the question is answered or if that is not possible, by a motion to strike immediately thereafter).

Example:

"I object, your honor, on the grounds that the question asked (answer offered) relates to a habit which is not specific, routine, and continuous in that it has not been established that any such regular activity did, in fact, occur. Or that because the witness has not established that he has personal knowledge of the habit involved."

b. An objection can be raised as to the competency of a person to testify if it can be shown that he does not have the ability to express himself, or that he is not capable of understanding the duty to tell the truth, or that he does not have personal knowledge and recollection regarding the subject matter upon which he is called to testify.

Example:

"I object, your honor, on the grounds that the witness is incompetent to answer the question because it has not been established that he was present at the time of the act involved. Or that because of extreme hardening of the arteries, the witness is unable to understand his duty to tell the truth."

c. Generally, an objection can be raised as to opinion evidence by lay witnesses unless it is from their personal observation of the facts in issue and when from the nature of those facts, no better evidence thereof can be obtained.

Example:

"I object, your honor, on the grounds that the opinion of this witness is inadmissible because it is not based upon his personal observation. Or that because there is documentary evidence relevant to this matter which is better evidence than the opinion of this witness which we would like to introduce at this time."

d. Leading questions are inadmissible where they suggest a fact to a witness which is not yet in evidence in the case and where the answer would be implicit with admission of the fact, i.e., "How long has it been since you stopped beating your wife?"

Example:

"I object, your honor, on the grounds that this question is leading the witness to answer a question on a fact which is not yet in evidence in this case."

e. Objections can be raised where the question involves matters that are privileged and which the holder of the privilege wishes to protect. Such privileges include doctor-patient (held by patient); attorney-client (held by client).

Example:

"I object, your honor, on the grounds that this question relates to a matter falling within the physician-patient privilege which the patient wishes to exercise at this time."

f. Hearsay evidence is prima facie not admissible. This is evidence of a statement that was made other than by the witness which is offered to prove the truth of the statement, i.e. testimony as to statements made by someone else outside court or offering a document written by someone else. Evidence of previous court transcripts, however, is an exception to this rule.

Example:

"I object, your honor, to the question on the grounds that it is in violation of the hearsay rule in that the witness is being asked to comment on a statement made by a third person out of the presence of this court."

B. Prior Court Decisions

No two cases are identical in all their facts; however, it is possible to draw analogies between decided cases and pending ones. Courts will often rely on prior court opinions in reaching their decisions. This reliance on precedent is fundamental to our system of law.

Students of the law will rely on prior court opinions in framing their arguments particularly in closing statements. This does not mean, however, that there is always total agreement on the interpretation of a particular opinion. The case summaries provided below may be utilized in this way. All references to ER are to the Environment Reporter Decisions volumes.

1. Injunction and Contempt

A corporation which continued to burn scrap in open fires in violation of State court injunction and the corporate officer who started one of the fires are guilty of criminal contempt, and a five day jail sentence is imposed.

Diamond v. Bruleen Metals (New York Supreme Court - 1970)
2 ERC 1107

2. Interstate Commerce

Although ships operating in interstate commerce are inspected by the federal government, they may be prosecuted for smoke emissions which violate City of Detroit Smoke Abatement Code.

Huron Portland Cement Company v. City of Detroit (U.S. Supreme Court - 1960)
1 ERC 1016

3. Nuisance

The definition of air pollution in the Pennsylvania law as any substance "which unreasonably interferes with the comfortable enjoyment of life or property" is not uncertain or unconstitutionally vague because it is equivalent to the definition of nuisance which is firmly established in the law.

Air Pollution Commission v. Coated Materials (Pennsylvania Court of Common Pleas - 1970)
1 ERC 1444

4. Open Burning

A Vermont regulation which prohibits open burning except in cases of overwhelming emergency is valid, since regulation has a reasonable relationship to the elimination of air pollution.

Vermont v. Waterbury (Vermont Supreme Court - 1970)
2 ERC 1111

5. Permits

Issuance of permit to operate equipment does not prevent a subsequent prosedution charging violation of an air pollution regulation because the permit does not relieve alleged polluter from compliance with the law.

Arizona v. Arizona Mines (Arizona Supreme Court - 1971)
2 ERC 1526

6. Ringelmann Chart

Air pollution regulation which adopts the Ringelmann standards are not unconstitutionally vague since the Chart sets forth reasonable standards for the detection of air pollution.

Arizona v. Arizona Mines (Arizona Supreme Court - 1971)
2 ERC 1526

7. Search and Seizure

A prosecution under the section which forbids the refusal of entry to an inspector will fail where the inspection is made on an area wide basis. (This type of inspection technique is rarely used in air pollution enforcement).

Camara v. Municipal Court and See v. Seattle (U.S. Supreme Court - 1967)

C. Glossary of Legal Terms

1. Arraignment

In criminal practice. To bring a prisoner to the bar of the court to answer the matter charged upon him in the indictment. The arraignment of a prisoner consists of calling upon him by name, reading to him the indictment, demanding of him whether he be guilty or not guilty, and entering his plea.

2. Breach of Contract

See Chapter 3, Part I,A.

3. Bribery

See Chapter 3, Part I,A.

4. Civil Action

An action wherein an issue is presented for trial formed by averments of complaint and denials of answer or replication to new matter; an adversary proceeding for declaration, enforcement, or protection of a right, or redress, or prevention of a wrong. Every action other than a criminal action.

5. Conspiracy

See Chapter 3, Part I,A.

6. Contempt

A willful disregard or disobedience of a public authority, usually a court order.

7. Criminal Action

Whole or any part of procedure which law provides for bringing offenders to justice. The proceeding by which a party charged with a public offense is accused and brought to trial and punishment. A criminal action is (1) an action prosecuted by the state as a party, against a person charged with a public offense, for the punishment thereof; (2) an action prosecuted by the state, at the instance of an individual, to prevent an apprehended crime, against his person or property.

8. Defendant

The person defending or denying; the party against whom relief or recovery is sought in an action or suit.

9. Ex Parte

On one side only; by or for one party; done for, in behalf of, or on the application of, one party only.

10. Fraud

See Chapter 3, Part I,A.

11. Habeas Corpus

The name given to a variety of writs having for their object to bring a party before a court or judge.

12. Hearsay

Evidence not proceeding from the personal knowledge of the witness, but from the mere repetition of what he has heard others say. Normally hearsay evidence is not admissible at a trial, but there are many exceptions to the hearsay rule.

13. Immaterial

Not important or pertinent. Evidence which has no substantial consequence and will be excluded if objected to.

14. Injunction

A prohibitive writ issued by a court of equity, at the suit of a party complainant, directed to a party defendant in the action, or to a party made a defendant for that purpose, forbidding the latter do do some act, or to permit his servants or agents to do some act, which he is threatening or attempting to commit, or restraining him in the continuance thereof, such act being unjust and inequitable, injurious to the plaintiff, and not such as can be adequately redressed by an action at law. A judicial process operating in personam and requiring person to whom it is directed to do or refrain from doing a particular thing.

15. Irrelevant

Inapplicable or impertinent to a fact or argument. Evidence is irrelevant where it has no tendency to prove or disprove any issue involved.

16. Libel

See Chapter 3, Part I,A.

17. Misdemeanor

Offenses lower than felonies and generally those punishable by fine or imprisonment otherwise than in penitentiary. In APEX County, a misdemeanor shall be punishable by a fine of up to and inclusive of $500 per offense and/or a sentence of up to and inclusive of six (6) months in the county jail. (See Section 24253).

18. Motion

Request for a court ruling.

19. Negligence

See Chapter 3, Part I,A.

20. Nolo Contendere

The name of a plea in a criminal action having the same legal effect as a plea of guilty, so far as regards all proceedings on the instrument, and on which the defendant may be sentenced.

21. Perjury

See Chapter 3, Part I,A.

22. Plaintiff

A person who brings an action; the party who complains or sues in a person action and is so named on the record.

23. Plea

An accused's formal statement in court that he is not guilty, guilty, or nolo contendere.

24. Slander

See Chapter 3, Part I,A.

25. Stay of Execution

The stopping or arresting of execution on a judgment, that is of the judgment-creditor's right to issue execution, for a limited period.

26. Subpoena

A process to cause a witness to appear and give testimony, commanding him to lay aside all pretenses and excuses, and appear before a court or magistrate therein named at a time therein mentioned to testify for the party named under a penalty therein mentioned.

27. Subpoena Duces Tecum

A process by which the court, at the instances of a suitor, commands a witness who has in his possession or control some document or paper that is pertinent to the issues of a pending controversy, to produce it at the trial.

28. Summons

A written notice stating the reason, time, and date an accused is required to appear before a court.

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29. **Usury**

See Chapter 3, Part I,A.

30. **Warrant**

A witten order by a court describing the offense charged, the name of the accused and ordering the arrest of the accused.

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CHAPTER 4

Chapter 4

AIR POLLUTION CONTROL - LEGAL REFERENCES

Part I - Federal Legislation

The current federal air pollution control law is known as the Clean Air Act Amendments of 1970. The provisions of this law set the pace and tone of the nationwide control effort. The 1970 Clean Air Act Amendments compared with earlier federal laws is much stronger and ambitious, clearly demonstrating the federal government's goal of protecting, restoring, and enhancing air quality. To better understand this law, it would be helpful to briefly review the earlier federal legislation.

A. Short History of Federal Air Quality Law

In 1955 the Congress adopted the first national air pollution control law. Its objective was modest: to conduct research and to provide technical assistance to state governments.

The quality of the atmosphere deteriorated and this led in 1963 to a legislative response which broadened federal responsibility by the adoption of the Clean Air Act. The first Clean Air Act established a system for providing federal grants to develop, establish, and improve local control programs. It also provided a procedure, albeit a weak one, for the federal abatement of interstate pollution.

The automobile was identified as a major contributor to the degradation of air quality in 1965. The Motor Vehicle Air Pollution Control Act authorized the Department of Health, Education and Welfare to establish emission standards for "new" automobiles while prohibiting (preempting) state regulation.

The meteorological fact that air pollution does not respect political boundaries was recognized in the Air Quality Act of 1967. This law attempted to legislate a regional approach to the abatement of air pollution.

The Air Quality Act of 1967 required the Secretary of the Department of Health, Education and Welfare (DHEW) to designate air quality regions and to publish air quality criteria and control technology documents. The states, in accordance with a statutory timetable, were then required to adopt air quality standards and a plan for their implementation applicable to those portions of the state within a region.

The Air Quality Act proved to be unworkable. Its procedures were cumbersome and time consuming. This was clearly demonstrated in the only lawsuit brought under the Act, U. S. V. Bishop Processing Company, 90S.CT. 1965 (1970). It has been estimated that the costs of the litigation to the government exceeded the total value of the company. There were also organizational and funding problems. The DHEW also failed to enforce the Act's motor vehicle section in the way the draftsmen had intended. Compliance with the motor vehicle emissions standards were tested on manufacturer's prototype (specially tuned and adjusted) vehicles. The result was that a majority of the automobiles sold to the public failed to meet the standards. The stage was now set for drastic federal action.

B. The Clean Air Act Amendments of 1970 (Digest)

The full text of the Act can be obtained from the Game Director; however, for most purposes the digest should be adequate.

1. Planning and Program Grants (Sec. 105)

Grants for air pollution control agencies may be made for up to 2/3 (3/4) of the cost of planning, developing, establishing, or improving, and up to 1/2 (3/5) of the cost of maintaining air pollution control programs (regional programs).

Grants to municipal, county, or interstate agencies will be made only if they have substantial responsibilities for carrying out state implementation plans. Any local applications for federal assistance must indicate how this objective will be achieved.

(The review for the following ten sections is found with a few changes in "A Citizen's Guide to Clean Air," The Conservation Foundation, 1972.)

2. Air Quality Control Regions (Sec. 107)

The Federal Environmental Protection Agency (EPA) assisted by the states, is to designate air quality control regions. These are the basic geographic units in which the control process takes place. Regional boundaries are based on considerations of climate, meteorology, topography, urbanization, and other factors affecting air quality conditions in each area. A region can cover only part of one state or it can include portions of several states which share a common air pollution problem. The country has been divided into about 250 regions. As pollution patterns change or as more information about problems is gathered, the boundaries of some of the regions may change.

3. Criteria Documents (Sec. 108)

EPA is required by law to develop air quality criteria for the major pollutants: particulate matter, sulfur oxides, hydrocarbons, carbon monoxide, and so on. These criteria, which are issued in "criteria documents," give the levels at which these pollutants-- by themselves and in combination with other pollutants-- are known to have adverse effects on public health or welfare.

Simultaneously, EPA provides information on control techniques for each of these pollutants, describing the methods available to reduce emissions. Such information must include the latest technology, the costs of emission control, and the economic feasibility of alternative control methods. EPA is required to review both criteria documents and control-technology documents from time to time and to revise them as new knowledge becomes available.

4. National Ambient Air Quality Standards (Sec. 109)

A national ambient air quality standard is the maximum level which will be permitted for a given pollutant. There are two kinds of such standards: primary and secondary. Primary standards are to be sufficiently stringent to protect the public health; secondary standards must protect the public welfare.

EPA sets these standards after it issues a criteria document and a control-technology document on the pollutant in question.

Both the primary and secondary standards apply to all control regions.

5. Implementation Plans (Sec. 110)

Within nine months after EPA issues primary and secondary national ambient air quality standards for a pollutant, each state must formulate an "implementation plan" to meet, maintain, and enforce those standards in each air quality control region within its jurisdiction. The states must hold public hearings on these plans, adopt them, and submit them to EPA for approval. Each state plan must provide for the attainment of primary standards within three years of EPA's approval of the state's plan; secondary standards must be attained within a "reasonable time." If a state fails to submit a satisfactory plan, EPA has the authority to write its own plan for the state, which the state must then carry out.

The implementation plan will be approved only if it includes emission limitations, schedules and timetables for compliance with the limitations, land-use and transportation controls, and to the extent necessary and practicable, periodic inspection and testing of motor vehicles.

6. Standards of Performance (Sec. 111)

The Act requires EPA to set "standards of performance" for new and "modified" stationary sources of pollution. These standards are distinct from the ambient air quality standards described above. They constitute direct emission limitations for all major pollutants from specified types of sources, such as portland cement plants and municipal incinerators.

The term "stationary sources" generally is interpreted to mean facilities that affect air quality because of their own air pollutant emissions. It is generally recognized, however, that facilities such as airports, amusement parks, highways, shopping centers, and sport complexes also affect air quality by indirect means, primarily by means of the mobile source activity associated with them. EPA has said, therefore, that plans must be formulated by the states and approved by EPA which describe measures to be taken to insure maintenance of the national air quality standards and which analyze "all the significant air quality implications of growth and development, including not only the increased air pollution arising directly from new commercial, industrial, and residential development, but also that arising from increases in demand for electricity and heat, motor vehicle traffic, and production of solid waste.

All standards of performance are applicable nationally, but only to sources in a category specified by EPA. They apply principally to new pollution sources. But they also apply to existing sources whenever "modification" (physical change or change in the method of operation) results in increased emissions of old pollutants or in new emissions of new pollutants.

For all existing unmodified sources in the specified categories, the states are required to set state performance standards, under procedures to be established by EPA. EPA will also prescribe procedures under which the states may choose to enforce the federal standards for new and modified sources.

7. Hazardous Air Pollutants (Sec. 112)

Some pollutants are more toxic than others. For those which are not covered by an ambient standard and which EPA believes "may cause, or contribute to, an increase in mortality or . . . in serious irreversible, or incapacitating reversible, illness," EPA must set emission standards that incorporate "an ample margin of safety to protect the public health." Such pollutants include, for example, asbestos, beryllium, and mercury.

8. Auto Emission Control (Sec. 202)

The Act itself has set deadlines for controlling major emissions from motor vehicles. Beginning with the model year 1975, emissions of carbon monoxide and hydrocarbons from automobiles and light trucks must be reduced by at least 90 percent from 1970's partially controlled levels. Nitrogen-oxide emissions from model year 1976 autos must be reduced at least 90 percent from the uncontrolled 1971 levels. If automobile manufacturers contend that it is impossible to meet the reduction levels for carbon monoxide and hydrocarbons in time, they may apply to EPA in January, 1972, for a one-year extension of the deadline. If they wish to make the same argument in the case of nitrogen oxides, they may apply to EPA for a one-year extension in January, 1973. EPA is empowered to grant or reject such r[illegible]ests for postponement under certain circumstances. But a[illegible]tension beyond one year would require authorization from Congress.

It should be noted that the federal standards apply only to "new" motor vehicles, those for which ownership has not passed to the ultimate purchases-- resulting in federal regulation of the automobile manufacturers. The Act encourages states to regulate emissions from other than "new" cars and provides grants (Sec. 210) for this purpose. Many states and local governments currently have automobile regulations including anti-smoke, pollution control device, and maintenance requirements.

9. Monitoring and Public Information Rights (Sec. 114)

EPA may require states and individual sources to monitor pollutant emissions, to keep records, and to submit periodic reports. All such records and reports are to be considered public information, with one exception: EPA may keep confidential any trade secrets or other information whose public availability the manufacturer has shown to be of potential harm to his business. However, emission data are specifically exempted from such protection.

10. Federal Enforcement (Sec. 110, 113, 303)

Once standards and implementation plans are in effect, EPA is required to oversee state and local enforcement. Where widespread violations indicate that the state is failing to enforce a plan, EPA may step in and enforce it or EPA may enforce portions of a plan by issuing orders of compliance or bringing civil actions in federal courts for violations. EPA is also empowered to sue for immediate restraint of any pollutant source which is imminently endangering the health of persons-- if state or local authorities have failed to abate such pollution under their own regulations.

11. Citizen Suits (Sec. 304)

Any citizen may bring suit against any person or corporation alleged to be violating an emission standard or other limitation applicable under the Act. Citizens may also sue the Administrator of EPA for failure to perform an action required of him by the Act. In cases brought by citizen plaintiffs, the courts are empowered to award the costs of litigation to such plaintiffs whenever the court determines such an award is appropriate.

C. Federal Environmental Protection Agency (EPA)

The Federal Environmental Protection Agency (EPA) was created by Executive (Presidential) Order in 1970. It was established as an independent agency and assigned administration of most, but not all, of the federal environmental programs. EPA has responsibility for the control of air pollution, water pollution, and noise pollution, as well as the management of solid wastes; and for the regulation of pesticides and radioactive materials.

EPA has regional offices which are generally the point of contact for local environmental agencies. The regional offices administer the program of federal grants.

D. National Environmental Policy Act of 1969 NEPA)

The National Environmental Policy Act (NEPA) requires that an environmental impact statement be prepared prior to the commencement of "major federal actions significantly affecting the quality of the human environment. . ." The statements require each agency to discuss all environmental consequences of the proposed action, ways to minimize the damages, and alternative courses of action. The statements are circulated for comment and submitted to the President's Council on Environmental Quality (CEQ). If the statement is in any way deficient or the harm is substantial enough, the proposed action may be delayed or prohibited. Although many questions of interpretation remain unanswered, NEPA during its first three years has proven to be a powerful tool for environmentalists concerned about the effects of federal projects including highways, sewage treatment facility, barge canal and dam construction.

Several state and local governments have been impressed with the value of requiring the preparation of an environmental impact statement. They have adopted legislation which requires private as well as public agencies to assess environmental harm which might result from proposed actions. The type of project covered under these provisions includes land subdivisions, the construction of new facilities, and the alteration of existing installations which might result in adverse environmental impact.

Part II - State Legislation

APEX County is a legal subdivision of a state. The governing body of the county is the Board of Supervisors which has the authority to adopt local laws.

In 1965 the state legislature adopted an air pollution control law which created an air pollution control district in every county. The law established two emission standards which may be enforced by every air pollution control district. The first (Section 24242) prohibits the emission (for longer than 3 minutes in any hour) of any air contaminant darker than No. 2 on the Ringelmann Chart, or of an equivalent opacity. The second (Section 24243) is a general nuisance provision which prohibits the discharge of any material which injures or annoys a considerable number of people in a neighborhood. The counties may adopt additional and more specific regulations.

The State Air Pollution Control Law is divided into articles: Article 1 - Creation and Functioning of Districts, Article 2 - Officers, Article 3 - Prohibitions, Article 4 - Rules and Regulations, Article 5 - Variances, and Article 6 - Procedure. The most important sections are indicated by asterisks next to the section numbers.

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STATE AIR POLLUTION CONTROL LAW

Article 1. Creation and Functioning of Districts

Legislative Finding and Declaration (Sec. 24198)

The Legislature finds and declares that the people of the Sate have a primary interest in atmospheric purity and freedom of the air from any air contaminants and that there is pollution of the atmosphere in many portions of the State which is detrimental to the public peace, health, safety, and welfare of the people of the State.

Legislative Finding (Sec. 24199)

The Legislature hereby finds and declares:

(a) That in portions of the State the air is polluted with smoke, charred paper, dust, soot, grime, carbon, noxious acids, fumes, gases, odors, particulate matter, and other air contaminants.

(b) That it is not practical or feasible to prevent or reduce such air contaminants by local county and city ordinances.

(c) That in other portions of the State the air is not so polluted.

(d) That it is necessary, therefore, to provide for air pollution control districts in those portions of the State where regulations are necessary and feasible to reduce air contaminants in order to safeguard life, health, property, and the public welfare to make possible the comfortable enjoyment of life and property.

Air Pollution Control District (Sec. 24200)

In each county there is hereby created an air pollution control district.

Resolution of County Board of Supervisors (Sec. 24202)

An air pollution control district shall not transact any business or exercise any of its powers under this chapter until or unless the Board of Supervisors of the county in which it is situated, by proper resolution, declares at any time hereafter that there is need for an air pollution control district to function in such county.

Hearing on Need for Functioning of District (Sec. 24203)

The Board of Supervisors at any time on its own motion may hold a public hearing to determine whether or not there is need for an air pollution control district to function.

Resolution of Need; Grounds; Commencement of Function (Sec. 24205)

The Board of Supervisors may adopt a resolution declaring that there is need for an air pollution control district to function if from the evidence received at such a public hearing it finds:

(a) That the air within such county is so polluted with air contaminants as to be injurious to health, or an obstruction to the free use of property, or offensive to the senses of a considerable number of persons, so as to interfere with the comfortable enjoyment of life or property.

(b) For any reason it is not practical to rely upon the enactment or enforcement of local, county, and city ordinances to prevent or control the emission of smoke, fumes, or other substances which cause or contribute to such pollution.

Upon the adoption of this resolution, the district shall begin to function.

"Air Contaminant," Defined (Sec. 24208)

As used in this chapter, "air contaminant" includes smoke, charred paper, soot, grime, carbon, dust, noxious acids, fumes, gases, order or particulate matter, or any combination thereof.

Powers of District (Sec. 24212)

Upon the adoption by the Board of Supervisors of a resolution declaring that there is need for an air pollution control district to function, the air pollution control district in that county shall have power:

(a) To have perpetual succession.

(b) To sue and be sued in the name of the district in all actions and proceedings in all courts and tribunals of competent jurisdiction.

(c) To adopt a seal and alter it at its pleasure.

(d) To take by grant, purchase, gift, devise, or lease, hold, use, enjoy, and to lease or dispose of real or personal property of every kind within or without the district necessary to the full exercise of its powers.

(e) To lease, sell, or dispose of any property or any interest therein whenever in the judgment of the air pollution control board such property, or any interest therein, or part thereof, is no longer required for the purposes of the district, or may be leased for any purpose without interfering with the use of the same for the purposes of the district, and to pay any compensation received therefor into the general fund of the district.

Article 2. Officers

Air Pollution Control Board; Ex Officio (Sec. 24220)

The Board of Supervisors of a county shall be, and they are hereby designated as, and empowered to act as, ex officio of the air pollution control board of the air pollution control district in such county.

Duties of Control Officer (Sec. 24224)

The air pollution control officer shall observe and enforce, within his air pollution control district:

(a) The provisions of this statute.

(b) All orders, regulations, and rules prescribed by the air pollution control board of the air pollution control district pursuant to this statute.

(c) All variances and standards which the hearing board has prescribed pursuant to Article 5 of this statute.

Hearing Board Appointment (Sec. 24225)

The air pollution control board may appoint a hearing board, the makeup and terms of which are at the discretion of the air pollution control board.

Control Officer as Peace Officer (Sec. 24231)

In enforcing the provisions of this statute, and all provisions of the Vehicle Code relating to the emission and control of air contaminants and the orders, regulations, rules, variances, and standards mentioned in Section 24224, the air pollution control officer of an air pollution control district is a peace officer.

Article 3. Prohibitions

Applicability of Statute (Sec. 24241)

The provisions of this statute do not apply within any air pollution control district unless and until, pursuant to resolution as provided in Article 1 of this statute, such air pollution control district may function and exercise its power.

Discharge of Air Contaminants; Smoke Prohibition (Sec. 24242)

A person shall not discharge into the atmosphere from any single source of emission whatsoever any air contaminant for a period or periods aggregating more than three minutes in any one hour which is:

(a) As dark or darker in shade as that designated as No. 2 on the Ringelmann Chart, as published by the United States Bureau of Min[illegible] or

(b) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subsection (a) of this section.

Discharge of Injurious or Annoying Material; Nuisance Prohibition (Sec. 24243)

A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which causes injury, detriment, nuisance or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health, or safety of any such persons or the public or which cause or have a natural tendency to cause injury or damage to business or property.

Authority to Enter Premises and Stop Vehicles (Sec. 24246)

The air pollution control officer, during reasonable hours, for the purpose of enforcing or administering this chapter, or any provisions of the Vehicle Code relating to the emission or control of air contaminants, or of any order, regulation, or rule prescribed pursuant thereto, may enter every building, premises or other place, except a building designed for and used exclusively as a private residence and may stop, detain, and inspect any vehicle, designed for and used on a public highway but which does not run on rails. Every person is guilty of a misdemeanor who in any way denies, obstructs, or hampers such entrance, or such stopping, detaining, or inspection of such vehicle, or who refuses to stop such a vehicle upon the lawful order of the air pollution control officer.

Enactment of Local Regulations (Sec. 24247)

The Legislature does not, by the provisions of this chapter, intend to occupy the field.

The provisions of this statute do not prohibit the enactment or enforcement by any county or city of any local regulation stricter than the provisions of this statute and stricter than the rules and regulations adopted pursuant to Article 4 of this statute, which local ordinance prohibits, regulates, or controls air pollution.

Orders, Rules, and Regulations (Sec. 24250)

Nothing in this article limits in any way the power of the air pollution control board to make needful orders, rules, and regulations pursuant to Article 4 of this chapter. Nothing in this article permits any action contrary to any such order, rule, or regulation.

Injunction (Sec. 24252)

Any violation of any provision of this statute or of any order, rule, or regulation of the air pollution control board may be enjoined in a civil action brought in the name of the people of the State except that the plaintiff shall not be required to allege facts necessary to show or tending to show lack of adequate remedy at law or to show or tending to show irreparable damage or loss.

Violation; Misdemeanor; Separate Offense for Each Day (Sec. 24253)

Every person who violates any provision of this statute or any order, rule, or regulation of the air pollution control board is guilty of a misdemeanor, punishable by imprisonment in the county jail for a period not exceeding six (6) months, or by a fine not exceeding $500, or both. Every day during which such violation occurs constitutes a separate and distinct offense.

Violation; Civil Penalty; Separate Offense for Each Day (Sec. 24254)

Any violation of the provisions of this statute or order, rule, or regulation punishable as a misdemeanor may, in the discretion of the air pollution control officer, be prosecuted in a civil action wherein the maximum civil penalty shall not exceed $10,000 for each violation. Every day during which such violation occurs constitutes a separate and distinct offense.

"Person," Defined (Sec. 24255)

(a) As used in this chapter, "person" also means any state or local governmental agency or public district, or any officer or employee thereof; provided, however, that no state or local governmental agency, or public district, or any officer of employee thereof, shall be criminally liable or responsible under the provisions of this chapter for any acts done by such governmental agency, or public district, in the performance of its functions or by such officers or employees in the performance of their duties. No criminal action shall hereafter be maintained or prosecuted for such acts, and all criminal actions heretofore instituted for such acts shall be dismissed. Any violation of any provision of this chapter or of any order, rule, or regulation of the air pollution control board, by any governmental agency, or public district, or by any officer or employee thereof, may be enjoined in a civil action brought in the name of the poeple of the State.

(b) The United States or its agencies, to the extent authorized by federal law.

Article 4. Rules and Regulations

Powers of Control Board (Sec. 24260)

The air pollution control board of an air pollution control district may make and enforce all needful orders, rules, and regulations necessary or proper to accomplish the purposes of this statute for the administration of such district, and may perform all other acts necessary or proper to accomplish the purposes of this statute.

Hearing; Notice and Publication (Sec. 24261)

The air pollution control board shall not enact any order, rule, or regulation until it first holds a public hearing thereon. It shall not give less than ten (10) days notice of the time and place of such public hearing by publication in a newspaper of general circulation published within the district if such a newspaper is published within the district. If no newspaper of general circulation is published within the district it shall give notice of the time and place of public hearing by posting in a public place not less than ten (10) days before such hearing.

Reduction of Air Contaminants (Sec. 24262)

Whenever the air pollution control board finds that the air in the air pollution control district is so polluted as to cause any discomfort or property damage at intervals to a substantial number of inhabitants of the district, the air pollution control board may make and enforce such orders, rules, and regulations as will reduce the amount of air contaminants released within the district.

Permits for Construction or Alteration (Sec. 24263)

The air pollution control board may require by regulation that before any person either builds, erects, alters, replaces, operates, sells, rents, or uses any article, machine, equipment, or other contrivance specified by such regulation, the use of which may cause the issuance of air contaminants, such person shall obtain a permit to do so from the air pollution control officer.

Reduction or Control of Air Contaminants; Motor Vehicle Equipment (Sec. 24263.7)

The air pollution control board by regulation may:

(a) Require the installation and establish standards for performance for any article, device, equipment, or method specifically designed or intended for installation or use upon or in any motor vehicle, for the purpose of eliminating, reducing, or controlling the issuance of air contaminants.

(b) Prohibit the sale, offering for sale or installation of any article, device, equipment, or method specifically designed or intended for installation or use upon or in any motor vehicle to eliminate, reduce, or control the issuance of air contaminants, unless such article, device, equipment or method is of a type which has been submitted to and approved by the air pollution control officer as meeting the minimum standard of performance as authorized in this section. Upon approval the air pollution control officer shall issue a permit authorizing the sale, offering for sale or installation of any said approved article, device, equipment, or method referred to in this section.

(c) The rules and regulations shall provide for a schedule of installation by which motor vehicles are to be equipped with the emission control device, taking into consideration the number of motor vehicles to be equipped and the availability of the devices.

Plans and Specifications for Permit (Sec. 24264)

The air pollution control board may require that before the air pollution control officer issues a permit to build, erect, alter, or replace any equipment, that the plans and specifications show, and that the permit issued by the air pollution control officer require, that such building, erection, alteration, or replacement will be done in such a manner, and that such approved equipment be used as the air pollution control board finds will eliminate or reduce the discharge of any air contaminants.

Suspension of Permit for Failure to Supply Information (Sec. 24270)

If the holder of any permit provided for by the regulations of the air pollution control board within a reasonable time willfully fails and refuses to furnish to the air pollution control officer information, analyses, plans, or specifications requested by such air pollution control officer, the air pollution control officer may suspend the permit. He shall serve notice in writing of such suspension and the reasons therefor on the permittee.

Demand for Hearing (Sec. 24271)

Within ten (10) days after receipt of notice of suspension the permittee may file with the hearing board a demand for a public hearing as to whether or not the permit was properly suspended.

Hearing on Suspended Permit (Sec. 24274)

The air pollution control officer may request the hearing board to hold a public hearing to determine whether a permit should be revoked, or a suspended permit should be reinstated.

Powers of Hearing Board (Sec. 24276)

After a public hearing, the hearing board may:

(a) Continue the suspension of a permit suspended by the air pollution control officer, or

(b) Remove the suspension of an existing permit invoked by the air pollution control officer pending the furnishing by the permittee of the information, analyses, plans, and specifications required, or

(c) Find that no violation exists and reinstate an existing permit, or

(d) Revoke an existing permit, if it finds:

(1) The permittee has failed to correct any conditions required by the air pollution control officer, or

(2) A refusal of a permit would be justified, or

(3) Fraud or deceit was employed in the obtaining of the permit, or

(4) Any violation of this statute or of any rule or regulation of the air pollution control board.

Article 5. Variances

Variances Permitted (Sec. 24291)

The provisions of this statute do not prohibit the discharge of air contaminants to a greater extent or for a longer time, or both, than permitted by Article 3 of this statute or by rules, regulations, or orders of the air pollution control board, if not of a greater extent or longer time than the hearing board or a court after a hearing before the hearing board finds necessary pursuant to the provisions of this statute.

Hearing on Variances; Public Testimony (Sec. 24292)

(a) Except in cases of emergency, as determined by the hearing board, the hearing board on its own motion or at the request of any person may hold a hearing to determine under what conditions and to what extent a variance from the requirements established by Article 3 of this statute or by rules, regulations, or orders of the air pollution control board is necessary and will be permitted.

(b) The hearing board shall allow interested members of the public a reasonable opportunity to testify with regards to the matter under consideration, and shall consider such testimony in making its determination.

Grounds for Granting a Variance (Sec. 24296)

If the hearing board finds that because of conditions beyond control compliance with Article 3 of this chapter or with any rule, regulation, or order of the air pollution control board will result in an arbitrary and unreasonable taking of property or in the practical closing and elimination of any lawful business, occupation, or activity, in either case without a sufficient corresponding benefit or advantage to the people in the reduction of air contamination, it shall prescribe other and different requirements not more onerous applicable to plants and equipment operated either by named classes of industries or persons, or to the operation of separate persons; provided, however, that no variance may permit or authorize the maintenance of a nuisance.

Factors Considered by Hearing Board (Sec. 24297)

In determining under what conditions and to what extent a variance from said requirements is necessary and will be permitted, the hearing board shall exercise a wide discretion in weighing the equities involved and the advantages and disadvantages to the residents of the district and to any lawful business, occupation, or activity involved, resulting from requiring compliance with said requirements or resulting from granting a variance.

Article 6. Procedure

Subpoena (Sec. 24315)

Whenever the members of the hearing board conducting any hearing deem it necessary to examine any person as a witness at such hearing, the chairman of the hearing board shall issue a subpoena, in proper form, commanding such person to appear before it at a time and a place specified to be examined as a witness. The subpoena may require such person to produce all books, papers, and documents in his possession or under his control to such hearing.

Oaths (Sec. 24320)

Every member of the hearing board may administer oaths in every hearing in which he participates.

Swearing Witnesses (Sec. 24321)

At any hearing the hearing board may require all or any witnesses to be sworn before testifying.

Judicial Review of Hearing Board Actions (Sec. 24322)

Any person deeming himself aggrieved, including the air pollution control district, may maintain a special proceeding in the superior court, to determine the reasonableness and legality of any action of the hearing board.

Judicial Review (Sec. 24323)

Any person filing such a special proceeding after any decision of the hearing board shall be entitled to a trial de novo and an independent determination of the reasonableness and legality of such action in such court on all issues of law, facts, and mixed questions of law and facts and opinions therein involved.

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CHAPTER 5

Chapter 5

WATER POLLUTION CONTROL - LEGAL REFERENCE

Part I - Federal Legislation

The current federal water pollution control law is the Federal Water Pollution Control Act Amendments of 1972. This new law provides for the first time enforceable, comprehensive federal water pollution legislation; it supersedes nearly all previous federal law aimed at control of water pollution. This new law reflects the approach to pollution control embodied in the Clean Air Act Amendments of 1970 in that it calls for not only Water Quality Standards but individual and area source effluent limitations and national standards of performance for new or modified courses. Implementation is generally through the development of EPA approved State Implementation Plans with State and local government enforcement backed by Federal enforcement if necessary. The Act puts the Federal Government in the position to completely dominate the field of water pollution control.

A. A Short History of Federal Water Quality Law

The Rivers and Harbors Act of 1899 gave the Army Corps of Engineers control over discharges into navigable waters of the United States. It was designed primarily to protect navigability but was used on occasion to prosecute occasional or one-time discharges with a resulting small fine. In 1956 the Federal government entered the field of water pollution control with an Act (PL 84-660) which provided for the studying of pollution problems and grants for sewage treatment plants. This Act, however, had very little impact on water pollution control since it used a weak conference procedure for interstate pollution control and was virtually unenforceable.

The Water Quality Act of 1965 took water pollution control out of the Public Health Service and into the new Department of Health, Education and Welfare (HEW) and directed states to prepare plans for stream quality standards and methods to meet them. This and the 1966 Clean Water Restoration Act provided federal funds for studies, demonstration programs, construction of treatment plants, and programs for water pollution abatement planning, enforcement, training, and technical assistance. These laws, however, resulted primarily in additional funds for municipal sewage treatment plant construction and did little for overall water quality improvement and effective effluent control.

The Water Quality Improvement Act of 1970 resulted in some additional strengthening of controls and put water pollution control under the new Environmental Protection Agency (EPA). Again, no really effective nationwide enforcement program resulted.

During the late 60's and early 70's the public's strong concern for environmental protection measures caused the bringing of some successful suits against a few polluters under the old 1899 Rivers and Harbors Act with resulting small fines imposed. There was clearly need for strong, comprehensive, and enforceable legislation to protect and purify the nation's waters. On October 18, 1972 the Federal Water Pollution Control Act Amendments of 1972 was enacted, overriding a Presidential Veto.

B. The Federal Water Pollution Control Act Amendments of 1972

The full text of the Act can be obtained from the Game Director; the following provisions of the Act are outlined as a short digest of its major aspects and for most purposes should be adequate.

1. Goals and Objectives

The objective of the Act is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters" and it sets national goals to:

a. Eliminate the discharge of pollutants into navigable waters by 1985.

b. Achieve water quality which provides for the protection and propagation of fish, shellfish, and wildlife and for recreation in and on the water by July 1, 1983.

c. Prohibit the discharge of toxic pollutants.

d. Provide federal financial assistance to construct waste treatment plants.

e. Develop and implement waste treatment management planning to assure adequate control of sources of pollutants.

f. Make a major research and demonstration effort to develop technology necessary to eliminate the discharge of pollutants.

2. General Definition of Water Pollutant (Sec. 502 - 5)

The term "pollutant" means dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste discharged into water.

3. Administration

The Act will be administered by the Environmental Protection Agency but recognizes that it is the primary responsibility of the states to prevent, reduce, and eliminate pollution.

4. Grants for Water Pollution Control Programs

a. Planning and Program Grants (Sec. 102, Sec. 106)

At the request of the governor of a state, grants for water pollution control agencies may be made for up to ½ of the administrative expenses of a planning agency for a period not to exceed three years for the development of a comprehensive water quality control plan.

Grants to states to assist them in administering programs for the prevention, reduction, and elimination of pollution including enforcement activities, may be made in accordance with allotments to the states based on the extent of their pollution problems as determined by the (EPA) administrator. (No grant funds can be made under this section if the state agency is spending less of its own, non-federal funds for its pollution control program than it spent in the year ending June 30, 1971.)

b. Grants for Construction of Treatment Works (Sec. 201, Sec. 202)

Grants may be made to any state, municipality, or intermunicipal or interstate agency for up to 3/4 of the cost of construction of publicly owned treatment works.

c. Grants for Area-wide Waste Treatment Management Plans (Sec. 208)

Grants may be made to any agency to the extent of 100% of the reasonable costs of developing and operating a continuing area-wide waste treatment management planning process.

5. Water Quality Control Areas and Basins

The Federal Environmental Protection Agency (EPA) will publish guidelines for the identification of areas which have "substantial water quality control problems." The governor of each state, or if the governor does not act, the chief elected officials of local governments, may designate the boundaries of such an area and an agency or organization to develop an area-wide waste treatment management plan for the area. (Sec. 208) EPA assisted by the states will prepare and develop comprehensive water quality control programs for a "basin" or portion thereof to prevent, reduce, or eliminate pollution of surface and ground waters. A "basin" may include rivers and tributaries, streams, coastal waters, sounds, estuaries, bays, and lakes as well as the lands drained thereby. (Sec. 102)

In addition, the President, through the Water Resources Council will prepare a water resources plan for all basins in the United States by January 1, 1980. (Sec. 209)

6. Water Quality Criteria and Control Technology (Sec. 304)

EPA is required by law to develop and publish water quality criteria which will reflect the best scientific knowledge on the efforts of water pollutants on health and welfare including effects on plankton, fish, shellfish, wildlife, plant life, shorelines, beaches, esthetics, and recreation. The criteria will also include the latest information on the natural processes of water pollutant concentration and disposal, the effects of pollutants on the water based biological community and on factors effecting rates of entrophication and sedimentation.

Simultaneously, EPA will provide information on the latest control technology for water pollution effluent reduction from point sources (other than public treatment works) including primary and secondary treatment techniques, process and procedure innovations, and effects of operating methods. The best available technology specified will take into consideration costs and other non-water quality environmental impacts including energy requirements.

7. Water Quality Standards (Sec. 303)

A water quality standard is the maximum level of pollutants permitted in any designated waters. Water quality standards are set or approved by EPA and the standard set must protect the public health or welfare and be dependent upon the uses made of such waters. Standards must take into consideration the waters' use and value for public water supplies, propagation of fish and wildlife, recreational purposes, and agricultural, industrial, navigational, and other purposes.

8. Effluent Limitations (Sec. 301)

Effluent limitations to the "best practicable control technology" shall be achieved for all point sources by July 1, 1977 and effluent limitations based on secondary treatment for all publicly owned treatment works shall be achieved by the same date. By July 1, 1983 all point sources must have effluent limitations based on "the best available technology" which will result in the progress toward "the goal of the eliminations of all pollutants." By that same date, all publicly owned treatment works must have effluent limitations which will provide for the best practical waste treatment technology and provide for the application of technology at a later date which, if possible, will eliminate the discharge of pollutants. If the point source effluent limitations do not allow for the achievement and maintenance of the set water quality standards, a more stringent effluent limitation may be imposed.

In no case can radiological, chemical or biological warfare agents, or high level radioactive waste be discharged into any navigable waters.

9. Implementation Plans (Sec. 303)

Within six months of passage of the Federal Water Pollution Control Act Amendments of 1972, all states must have adopted suitable water quality standards and effluent limitations and other necessary measures to achieve and maintain those water quality standards. These standards and implementation plans must be approved by EPA; and if they are not, EPA will set water quality standards and implementation methods for achieving those standards in that state.

10. Water Quality Inventory (Sec. 305)

The EPA Administrator with each state must prepare each year a report which describes the water quality of all navigable waters, an inventory of all point and non-point sources of water pollution, and an analysis of the methods, schedule, costs, and benefits of achieving water quality consistent with the water quality criteria set forth by the administrator (under Section 304).

11. National Standards of Performance (Sec. 306)

The Act requires EPA to set "standards of performance" for new and "modified" stationary sources of pollution. These standards are distinct from the water quality standards described in (6) above. They constitute direct effluent limitations for all major water pollutants from specified types of sources, such as pulp and paper mills and fruit and vegetable canneries.

All standards of performance are applicable nationally, but only to sources in a category specified by EPA. They apply principally to new pollution sources. But they also apply to existing sources whenever "modification" (physical change or change in the method of operation) results in increased effluence of old pollutants or in the effluence of new pollutants.

For all existing unmodified sources in the specified categories, the states are required to set state performance standards, under procedures to be established by EPA. EPA will also prescribe procedures under which the states may choose to enforce the federal standards for new and modified sources.

12. Toxic and Pretreatment Effluent Standards (Sec. 307)

Some pollutants are more toxic than others. EPA will set effluent standards (or prohibitions) on toxic effluents, "taking into account the toxicity of the pollutant, its persistence, degradability, the . . . presence of the affected organisms in any waters, the importance of the affected organisms, and the nature and extent of the effect of the toxic pollutant." EPA will designate the category of sources to which such standards will apply. EPA will also establish pretreatment standards "to prevent the discharge of any pollutant through publicly owned treatment works if the pollutants would not be succeptable to treatment and would interfere with, fuse through, or be otherwise incompatible with such works."

13. Inspections, Monitoring and Entry (Sec. 308)

a. EPA shall require point effluent source owners to install and operate effluent monitoring and sampling equipment, keep records, and make reports on data collected.

b. An authorized representative shall have right of entry upon the premises of an effluent source and may examine and copy records collected and may take effluent samples.

c. Such information shall be available to the public, except portions of certain records that EPA judges to be important to "trade secrets."

14. Federal Enforcement (Sec. 309)

If EPA finds that any person is in violation of any conditions or limitations dealing with effluent limitations, monitoring, or reporting, EPA will notify the person and the State. If the State does not take appropriate action, EPA will assume "federal enforcement" and bring civil or criminal action against such person.

Any person found to be in violation of the Act under civil action will be subject to a penalty not to exceed $10,000 per day of violation.

Any person who willfully or negligently violates the Act shall be subject to a fine of not less than $2,500 nor more than $25,000 per day of violation.

Any person who knowingly makes any false statement or report, or tampers with or renders inaccurate any monitoring device required to be maintained under this Act shall be subject to a penalty of not more than $10,000 or of imprisonment for not more than six months or both

15. Oil and Hazardous Substance Liability (Sec. 311)

Any person who discharges into navigable waters of the United States any substance (other than oil) designated by EPA as a hazardous substance which persents an "imminent and substantial danger to the public health and welfare" and which cannot be removed, shall be liable to a penalty of not more than $5,000,000 in the case of discharge from a vessel and $500,000 in the case of discharge from a facility.

The discharge of oil or a hazardous substance in "harmful quantities" as determined by the President shall be liable to a civil penalty of not more than $5000 for each offense. A person who is in charge of a vessel or facility which discharges such hazardous substances and who does not immediately notify the U. S. Government shall be fined not more than $10,000 or imprisoned for not more than one year or both.

When any oil or hazardous substance is discharged into navigable waters and the removal of the discharge is not done properly by the owner of the vessel or facility, the U. S. Government will act to remove the substance and charge the owner for the actual cost of removal in an amount not to exceed:

a. $100 per gross ton or $14,000,000, whichever is less, for discharge from a vessel.

b. $8,000,000 for a facility.

c. In the case of willful negligence or willful misconduct, the full amount of the cost of removal.

16. Clean Lakes (Sec. 314)

Each state will prepare and submit to EPA for approval the eutrophic condition, the methods proposed to control the sources of pollution, and the methods proposed to restore the quality of all publicly owned fresh water lakes in the state.

EPA will provide grants to cover up to 70% of the funds spent by the state in carrying out EPA approved methods for controlling pollution and cleaning up the above lakes.

17. Thermal Discharges (Sec. 316)

EPA may impose thermal effluent limitations for a point source discharging into a body of water that will assure the protection of a balanced population of indigenous shellfish, fish, and wildlife in that water.

18. Permits and Licenses (Sec. 401)

EPA will issue permits for the discharge of any pollutant providing such discharge will meet all requirements of this Act. EPA may allow a state to administer its own permit system providing the state can demonstrate that its system is adequate to carry out the objectives of this Act.

The system must issue permits which:

a. Insure compliance with this Act.

b. Are for fixed terms not exceeding five years.

c. Can be terminated for misrepresentation.

d. Can be changed to require reduction in the permitted discharge.

e. Can control the disposal of pollutants into wells.

f. Insure that EPA, the public, and other states whose waters may be affected are notified and the opportunity for a public hearing is provided prior to issuing a permit.

19. Disposal of Sewage Sludge (Sec. 405)

No sewage sludge may be disposed of or deposited in such a manner that any pollutants from such sludge would enter navigable waters except in accordance with a permit issued by EPA or by the state under a permit system approved by EPA.

20. Citizens' Suits (Sec. 505)

Any citizen may commence a civil action on his own behalf against any person, EPA, the United States, or any other government instrumentality or agency for an alleged violation of:

a. An effluent standard or limitation.

b. An order issued by EPA or a state with respect to a standard or limitation.

c. EPA to perform any act or duty under the Act.

Part II - State Legislation

APEX County, as well as other counties in the state, are allowed to establish a Water Quality Control Board and a Water Quality Management Agency according to the following State legislation. The Board of Supervisors are the Water Quality Control Board of APEX County.

There is only one potentially enforceable water quality regulation contained in the State Law: Section 1749 Discharge Regulation. There is currently no enforcement nor penalty provision in the law. The counties may adopt additional and more specific regulations.

In the following index, the State Water Legislation is divided into two articles: Article 1 - Creation and Functioning of County Agencies, and Article 2 - Enforcement. The most important sections are indicated by asterisks next to the section numbers.

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STATE WATER POLLUTION LAW

(Critical sections are marked with an asterisk*)

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STATE WATER POLLUTION LAW

Article 1. Creation and Functioning of County Agencies

Legislative Finding and Declaration (Sec. 1740)

The legislature hereby finds and declares that in order to provide for the orderly and efficient administration of the state's water resources it is necessary that individual counties or groups of adjacent counties establish governmental subdivisions to assume responsibility for the reduction of water-carried pollutants in the state's waterways so as to enhance the beneficial usage of said waterways. The primary interest of these agencies shall be the purity of the state's water resources and to eliminate water conditions which are detrimental to the public peace, health, safety, or welfare of the people of the state.

Water Quality Control Board (Sec. 1741)

The Board of Supervisors of the county shall be ex-officio of the Water Quality Control Board and shall be the policy-making body of the Water Quality Management Office.

Water Quality Manager and Staff (Sec. 1742)

The Water Quality Control Board may establish a Water Quality Management Office, employ directors, managers, assistants, deputies, clerks, attaches, and other supporting personnel necessary to sustain a comprehensive water quality program.

Board's Delegation of Duties (Sec. 1743)

Each Water Quality Board may delegate any of its powers and duties vested in it to its staff excepting the following: (1) the promulgation of any regulation; (2) the issuance, modification, or revocation of any water quality plan, water quality objective, or waste discharge requirement; (3) the issuance, modification, or revocation of any cease and desist order and (4) the holding of any hearing on water quality control plans.

Public Statements (Sec. 1744)

Each Water Quality Board may issue policy statements relating to any water quality matter within its jurisdiction.

Duties of Board and Agency (Sec. 1745)

Each Water Quality Board shall:

(a) Obtain coordinated action in water quality control, including the prevention and abatement of water pollution and nuisance.

(b) Encourage and assist in self-policing waste disposal programs.

(c) Request enforcement by appropriate federal, state, and local agencies of their respective water quality control laws.

(d) Recommend to state and local governments projects which the Board determines to be beneficial to the water quality of the State.

(e) Report to the state and appropriate local health officers any case of suspected contamination in this region.

(f) Encourage regional planning and action for water quality control.

(g) Adopt and enforce appropriate rules and regulations for the enhancement of the waters of the region.

(h) Adopt water quality standards for the waters of the region.

(i) Prepare a comprehensive water quality control plan using public participation input.

(j) Establish a discharge permit program or other enforcement program as part of the overall agency program.

Article 2. Enforcement

Right to Enter (Sec. 1746)

Authorized agents of the Water Quality Board, during reasonable hours, for the purpose of enforcing or administering duly adopted rules and regulations may enter every building, premises or other place, except a building designed for and used exclusively as a private residence. Every person is guilty of a misdemeanor who in any way denies, obstructs, or hampers such entrance.

Relationship to Existing Laws (Sec. 1747)

The provisions of this chapter do not supersede any such local county or city regulation, unless such regulations are less restrictive than those set by the state.

Rights of Appeal (Sec. 1748)

Any action of the authorized agents of the local agency may be appealed to the full Water Quality Board. Further appeal procedures may be processed through the established judicial Courts.

Discharge Regulation (Sec. 1749)

No person shall discharge, spill, or otherwise allow noxious substances to enter into the waters of the state.

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CHAPTER 6

Chapter 6

SOLID WASTE MANAGEMENT - LEGAL REFERENCE

Part I - Federal Legislation

The current federal solid waste legislation is The Solid Waste Disposal Act as amended October 26, 1970. In this Act the federal government considers solid waste disposal to be primarily a problem of state and local governments and offers grant support for research, training, and demonstration programs in resource recovery. The Act, however, also requires EPA to promulgate guidelines and model statutes for solid waste collection, separation, recovery, and disposal systems; establishes a National Materials Policy which requires the efficient utilization and recovery of valuable resources and requires a plan for National Disposal Sites for the disposal of hazardous, toxic, biological, and radioactive wastes.

A. A Short History of Federal Solid Waste Law

In 1910 the United States Government Bureau of Mines was charged with studying the reclaiming and recycling of minerals and metals. In 1965 Congress enacted the Solid Waste Disposal Act which established a national research and development program to develop efficient means of disposing of solid wastes and to provide technical and financial assistance to the states.

The Solid Waste Disposal Act was amended by the Resource Recovery Act in 1970 with increased financial assistance to the states and with primary stress on resource recovery and solid waste treatment. Under the Act EPA is issuing municipal incinerator and sanitary landfill guidelines.

B. The Solid Waste Disposal Act as amended 1970 (Digest)

The full text of the Act can be obtained from the Game Director but this digest should be adequate for most purposes.

1. Findings and Purposes (Sec. 202)

There are ever increasing changes in the amount and type of solid waste generation due to technological changes, economic and population growth. The continuing concentration of population combined with inadequate methods of solid waste management are having an adverse effect on community life, the environment, and public health and resulting in a waste of valuable resources. The problem of solid wastes has become so great and widespread that it is national in scope and requires federal action.

The purpose of this Act is to provide technical and financial assistance to State, regional, and local agencies to promote methods of collection, transport, separation, recovery, and disposal of solid wastes through improved solid waste management practices, planning, and resource recovery.

2. Research, Demonstrations, Training, and Other Activities (Sec. 204)

EPA will render financial and other assistance to federal, state, local, and private agencies and institutions and to individuals for the conduct of research, studies, training, and demonstrations relating to:

a. Adverse health effects

b. The operation of solid waste programs

c. The reduction in solid waste generation

d. The recovery of materials and energy from solid waste.

In order to do the above, EPA will:

a. Collect and disseminate information

b. Evaluate methods and make recommendations

c. Make grants-in-aid and contracts for research, training, surveys, demonstrations, facility construction.

3. Special Study and Demonstration Projects on Recovery of Useful Energy and Materials (Sec. 205)

EPA may carry out investigations and demonstration projects to test and demonstrate methods:

a. of recovering materials and energy from solid waste

b. of reducing solid waste generation and changing solid waste characteristics

c. of collection, separation, and containerization to contribute to efficient reuse and disposal

d. of using subsidies, economic incentives and disincentives, depletion allowances, and tax incentives to encourage recycling and reuse of solid waste

e. of imposing disposal charges on packaging, containers, and vehicles to cover final cost of disposal and social costs.

4. Grants for State, Interstate, and Local Planning (Sec. 207)

EPA may make grants to state, interstate, municipal, and intermunicipal agencies not to exceed 66 2/3% of the cost to a municipality and 75% of the cost in other cases for:

a. Surveys of solid waste disposal practices

b. Development and revision of regional solid waste disposal plans providing for recycling or recovery of materials from solid wastes.

5. Grants for Resource Recovery Systems and Improved Solid Waste Disposal Systems (Sec. 208)

EPA can make grants of up to 50% to a municipality and 75% in other cases providing there is full consideration of area-wide planning including resource recovery, regional disposal, growth, land use , and air and water pollution impacts. Grants can be made for demonstration of resource recovery systems or improved solid waste disposal facilities.

6. Recommended Guidelines (Sec. 209)

EPA will publish federal guidelines for solid waste recovery, collection, separation, and disposal systems consistent with public health and welfare, air and water quality standards, and appropriate land use. EPA will recommend model codes, ordinances, statutes, technical and cost information on solid waste collection, separation, disposal, recycling, and recovery methods.

7. Grants or Contracts for Training Projects (Sec. 210)

EPA may make grants to cover all or part of the costs of projects for training and education of persons in management, supervision, design, operation, and maintenance of solid waste equipment and facilities.

8. National Disposal Sites Study (Sec. 212)

EPA will submit to Congress a plan for the creation of national disposal sites for the disposal of hazardous, radioactive, toxic chemical, and biological wastes.

9. General Provisions (Sec. 215)

No grant may be made to any private profit making organization.

Part II - State Legislation

Article 1. Creation and Functioning of Solid Waste Districts

Statement of Goals and Objectives (Sec. 4100)

The legislature hereby determines that, since improper and inadequate solid waste practices create public health hazards, environmental pollution, and economic loss, it is necessary to establish and maintain state and local programs for comprehensive solid waste management.

Such programs shall:

(a) Provide for the orderly extension and coordination of solid waste management systems in an area-wide manner and so as not to create pollution of the waters or air of the state, nor constitute a public nusiance and as to provide for the safe and sanitary disposal of solid waste.

(b) Take into consideration all aspects of planning, zoning, population changes, economic growth, and environmental impacts so as to protect and conserve the air, water, and land resources.

(c) Promote coordination and cooperation between public and private interests and among federal, state, and local governments in solid waste management in the public interest.

(d) Promote the preparation of a comprehensive long range solid waste management plan for the state and regions of the state.

Solid Waste Management District (Sec. 4106)

(a) The Board of Supervisors of any county may, by resolution adopted by a majority of its members, authorize that there be established a County District for the planning and regulation of solid waste storage, collection, transportation, processing, and disposal;

(b) Except that any municipality with a population density of 300 or more inhabitants per square mile shall be responsible for the collection, transportation, processing, and disposal of solid wastes within its boundaries.

Governing Body - Solid Waste District (Sec. 4120)

The Board of Supervisors or the City Council under Sec. 4106.2 shall be ex officio the Solid Waste Board which shall be the governing body of the District or municipality and may do any or all of the following:

(a) Make and enforce all rules and regulations necessary for the administration and government of the District and for the collection and disposal of solid waste in the District.

(b) Appoint agents and employees for the District sufficient to maintain and operate the facilities and property acquired for the purposes of the district.

(c) Establish and provide facilities for solid waste collection and disposal within and between cities, villages, and townships.

(d) Acquire, purchase, construct, own, maintain, and operate land equipment and facilities for solid waste collection, storage, transportation, processing, and disposal and establish, administer, coordinate, and regulate a system or systems for their use.

(e) Enter into such contracts as may be necessary to accomplish the purposes of the District.

(f) Fix and collect fees for the use of District-controlled solid waste equipment or facilities.

(g) Acquire land by eminent domain if necessary, for solid waste facilities.

(h) Abate nuisances caused by improper handling of solid waste.

(i) Regulate private solid waste operations through permits and licenses.

(j) Borrow money and incur indebtedness and guarantee the performance of its legal or contracted obligations.

(k) Perform all acts necessary or proper to accomplish the purposes of this Act.

Consent for Location of Facilities (Sec. 4260)

No city, county, District, or public or municipal corporation shall acquire and operate or cause to be acquired and operated any site for the disposal of solid waste, or transfer station, or collection point for solid waste within a city without the consent of the city council, or within an unincorporated area of a county, without the consent of the Board of Supervisors.

Article 2. Prohibitions

Relationship to Existing Laws (Sec. 5100)

The provisions of this Act do not supersede any such local county or city regulation, unless such regulations are less restrictive than those set by the state.

State Licensing of Solid Waste Disposal Sites (Sec. 5101)

A local district or other designated local authority may license and regulate solid waste disposal sites but they in turn must obtain approval from the State Department of Public Health.

Landfill Operation (Sec. 5102)

(a) No burning of solid waste is permitted in dumps or landfills.

(b) All solid waste at a dump or landfill must be covered with at least six inches of earth at the close of each day's operation and before operations at the site are discontinued the solid waste must have at least two feet of cover of cover over the surface.

(c) Landfill sites will be operated so that water pollution will not be created.

(d) The deposit of solid waste shall be supervised and no uncontrolled dumping shall be allowed and any salvaging, recycling, composting, or other solid waste handling must be controlled and supervised in such manner as to protect the public health and welfare and so as not to constitute a public nuisance. This provision shall not prohibit individuals from dumping or depositing solid wastes from their own residential activities onto the surface of the ground owned or leased by them when such wastes do not thereby create a public nuisance or adversely affect the public health.

Littering (Sec. 5103)

It is unlawful for any person to knowingly place, throw, or leave litter on any public or private property or water without the consent of the public authority or private owner having supervision over the property or water.

Article 3. Enforcement

Right to Enter (Sec. 6100)

Authorized agents of Solid Waste District Boards, during reasonable hours, for the purpose of enforcing or administering duly adopted rules and regulations may, upon showing proper identification, enter every puilding, premises, or other place, except a building used exclusively as a private residence. Every person is guilty of a misdemeanor who in any way denies, obstructs, or hampers such entrance.

Enforcement Officer (Sec. 6101)

In enforcing the provisions of this statute, any agent or employee appointed or hired by the governing body of a District as an enforcement officer, is a peace officer.

Duties of Enforcement Officer (Sec. 6102)

An enforcement officer of the Solid Waste Management District shall observe and enforce within his District:

(a) The provisions of this statute

(b) All orders, regulations, and rules prescribed by the Governing Board of the District pursuant to this statute.

Violation; Misdemeanor (Sec. 6103)

Every person who violates any provision of this statute or any order, rule, or regulation of the Governing Board of the District is guilty of a misdemeanor, punishable by imprisonment in the county jail for a period not exceeding six (6) months or by fine not exceeding $500 or both. Every day during which such violation occurs constitutes a separate and distinct offense.

Violation; Civil Penalty (Sec. 6104)

Any violation of the provisions of this statute or order, rule, or regulation punishable as a misdemeanor may, in the discretion of the Governing Board of the District, be prosecuted in a civil action wherein the maximum civil penalty shall not exceed $10,000 for each violation. Every day during which such violation occurs constitutes a separate and distinct offense.

Part III - Noise Control

Excessive noise in the community has traditionally been controlled by a general nuisance approach. If the condition were sufficiently annoying to the neighbors, there would be a violation of the ordinance. Recently a number of local governments have been more specific and provide quantitative levels which may not be exceeded. Ask the Game Director for sample provisions or see the References in Chapter 8.

Part IV - Pesticides

A few local governments have tackled the environmental abuse cause by the unwise use of pesticides. Most municipalities have deferred to other levels of government for relief. See Reference List in Chapter 8.

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CHAPTER 7

Chapter 7

THE BILL OF RIGHTS

As provided in the
FIRST TEN AMENDMENTS TO THE CONSTITUTION OF THE UNITED STATES

Effective December 15, 1791

Preamble

The conventions of a number of the States having at the time of their adopting the Constitution, expressed a desire, in order to prevent misconstruction or abuse of its powers, that further declaratory and restrictive clauses should be added: And as extending the ground of public confidence in the Government, will best insure the beneficient ends of its institution.

I Right to Freedom of Religion, Speech, Press, Assembly, Petition

Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof; or abridging the freedom of speech, or of the press; or the right of the people peaceably to assemble, and to petition the Government for a redress of grievances.

II Right to Keep and Bear Arms

A well regulated Militia, being necessary to the security of a free State, the right of the people to keep and bear Arms, shall not be infringed.

III Rights on Quartering of Soldiers

No soldier shall, in time of peace, be quartered in any house, without the consent of the Owner, nor in time of war, but in a manner to be prescribed by law.

IV Right against Unreasonable Search and Seizure

The right of the people to secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no Warrants shall issue, but upon probable cause, supported by Oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized.

V Right to Protection of Persons and Property

No person shall be held to answer for a capitol, or otherwise infamous crime, unless on a presentment or indictment of a Grand Jury, except in cases arising in the land or naval forces, or in the Militia, when in actual service, in time of War or public danger, nor shall any person be subject for the same offense to be twice put in jeopardy of life or limb; nor shall be compelled in any Criminal Case to be a witness against himself, nor be deprived of life, liberty, or property, without due process of law; nor shall private property be taken for public use, without just compensation.

VI Rights of Persons Accused of Crime

In all criminal prosecutions, the accused shall enjoy the right to a speedy and public trial, by an impartial jury of the State and district wherein the crime shall have been committed, which districts shall have been previously ascertained by law, and to be informed of the nature and cause of the accusation; to be confronted with the witnesses against him; to have compulsory process for obtaining Witnesses in his favor, and to have the Assistance of Counsel for his defense.

VII Right of Trial by Jury

In suits at common law, where the value in controversy shall exceed twenty dollars, the right of trial by jury shall be preserved, and no fact tried by a jury shall be otherwise re-examined in any Court of the United States, than according to the rules of the common law.

VIII Right to Protection Against Excessive Fines, Bail, Punishment

Excessive bail shall not be required, nor excessive fines imposed, nor cruel and unusual punishment inflicted.

IX Rights not enumerated retained by the people

The enumeration in the Constitution of certain rights, shall not be construed to deny or disparage others retained by the people.

X Rights reserved to the States and the People

The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people.

AMENDMENTS TO THE CONSTITUTION

Amendment 11 (Ratified February 7, 1795)

The Judicial Power of the United States shall not be construed to extend to any suit in law or equity, commenced or prosecuted against one of the United States by Citizens of another State, or by Citizens or Subjects of any Foreign State.

Amendment 12 (Ratified July 27, 1804)

The Electors shall meet in their respective states and vote by ballot for President and Vice-President, one of whom, at least, shall not be an inhabitant of the same state with themselves; they shall name in their ballots the person voted for as President, and in distinct ballots the person voted for as Vice-President, and they shall make distinct lists of all persons voted for as President, and of all persons voted for as Vice-President, and of the number of votes for each, which lists they shall sign and certify, and transmit sealed to the seat of the government of the United States, directed to the President of the Senate; - The President of the Senate shall, in the presence of the Senate and House of Representatives, open all certificates and the votes shall then be counted; - The person having the greatest number of votes for President, shall be the President, if such number be a majority of the whole number of Electors appointed; and if no person have such majority, then from the persons having the highest numbers not exceeding three on the list of those voted for as President, the House of Representatives shall choose immediately, by ballot, the President. But in choosing the President, the votes shall be taken by states, the representation from each state having one vote; a quorum for this purpose shall consist of a member or members from two-thirds of the states, and a majority of all the states shall be necessary to a choice. And if the House of Representatives shall not choose a President whenever the right of choice shall devolve upon them, before the fourth day of March next following, then the Vice-President shall act as President, as in the case of the death or other constitutional disability of the President. - The person having the greatest number of votes as Vice-President, shall be the Vice-President, if such number be a majority of the whole number of Electors appointed, and if no person have a majority, then from the two highest numbers on the list, the Senate shall choose the Vice-President; a quorum for the purpose shall consist of two-thirds of the whole number of Senators, and a majority of the whole number shall be necessary to a choice. But no person constitutionally ineligible to the office of President shall be eligible to that of Vice-President of the United States.

Amendment 13 (Ratified December 6, 1865)

Section 1. Neither slavery nor involuntary servitude, except as a punishment for crime whereof the party shall have been duly convicted, shall exist within the United States, or any place subject to their jurisdiction.

Section 2. Congress shall have power to enforce this article by appropriate legislation.

Amendment 14 (Ratified July 9, 1868)

Section 1. All persons born or naturalized in the United States, and subject to the jurisdiction thereof, are citizens of the United States and of the State wherein they reside. No State shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States; nor shall any State deprive any person of life, liberty, or property, without due process of law; nor deny to any person within its jurisdiction the equal protection of the laws.

Section 2. Representatives shall be apportioned among the several States according to their respective numbers, counting the whole number of persons in each State, excluding Indians not taxed. But when the right to vote at any election for the choice of electors for President and Vice-President of the United States, Representatives in Congress, the Executive and Judicial officers of a State, or the members of the Legislature thereof, is denied to any of the male inhabitants of such State, being twenty-one years of age, and citizens of the United States, or in any way abridged, except for participation in rebellion, or other crime, the basis of representation therein shall be reduced in the proportion which the number of such male citizens shall bear to the whole number of male citizens twenty-one years of age in such State.

Section 3. No person shall be a Senator or Representative in Congress, or elector of President and Vice-President, or hold any office, civil or military, under the United States, or under any State, who, having previously taken an oath, as a member of Congress, or as an officer of the United States, or as a member of any State legislature, or as an executive or judicial officer of any State, to support the Constitution of the United States, shall have engaged in insurrection or rebellion against the same, or given aid or comfort to the enemies thereof. But Congress may by a vote of two-thirds of each House, remove such disability.

Section 4. The validity of the public debt of the United States, authorized by law, including debts incurred for payment of pensions and bounties for services in suppressing insurrection or rebellion, shall not be questioned. But neither the United States nor any State shall assume or pay any debt or obligation incurred in aid of insurrection or rebellion against the United States, or any claim for the loss or emancipation of any slave; but all such debts, obligations and claims shall be held illegal and void.

Section 5. The Congress shall have power to enforce, by appropriate legislation, the provisions of this article.

Amendment 15 (Ratified February 3, 1870)

Section 1. The right of citizens of the United States to vote shall not be denied or abridged by the United States or by any State on account of race, color, or previous condition of servitude.

Section 2. The Congress shall have power to enforce this article by appropriate legislation.

Amendment 16 (Ratified February 3, 1913)

The Congress shall have power to lay and collect taxes on incomes, from whatever source derived, without apportionment among the several States, and without regard to any census or enumeration.

Amendment 17 (Ratified April 8, 1913)

The Senate of the United States shall be composed of two Senators from each State, elected by the people thereof for six years; and each Senator shall have one vote. The electors in each State shall have the qualifications requisite for electors of the most numerous branch of the State legislatures.

When vacancies happen in the representation of any State in the Senate, the executive authority of such State shall issue writs of election to fill such vacancies: Provided, That the legislature of any State may empower the executive thereof to make temporary appointment until the people fill the vacancies by election as the legislature may direct.

This amendment shall not be so construed as to affect the election or term of any Senator chosen before it becomes valid as part of the Constitution.

Amendment 18 (Ratified January 16, 1919)

Section 1. After one year from the ratification of this article the manufacture, sale, or transportation of intoxicating liquors within, the importation thereof into, or the exportation thereof from the United States and all territory subject to the jurisdiction thereof for beverage purposes is hereby prohibited.

Section 2. The Congress and the several States shall have concurrent power to enforce this article by appropriate legislation.

Section 3. This article shall be inoperative unless it shall have been ratified as an amendment to the Constitution by the legislatures of the several States, as provided in the Constitution, within seven years from the date of the submission hereof to the States by the Congress.

Amendment 19 (Ratified August 18, 1920)

The right of citizens of the United States to vote shall not be denied or abridged by the United States or by any State on account of sex.

Congress shall have power to enforce this article by appropriate legislation.

Amendment 20 (Ratified January 23, 1933)

Section 1. The terms of the President and Vice-President shall end at noon on the 20th day of January, and the term of Senators and Representatives at noon on the 3d day of January, of the year in which such terms would have ended if this article had not been ratified; and the terms of their successors shall then begin.

Section 2. The Congress shall assemble at least once in every year, and such meeting shall begin at noon on the 3d day of January, unless they shall by law appoint a different day.

Section 3. If, at the time affixed for the beginning of the term of the President, the President elect shall have died, the Vice-President elect shall become President. If a President shall not have been chosen before the time fixed for the beginning of his term, or if the President elect shall have failed to qualify, then the Vice-President elect shall act as President until a President shall have qualified; and the Congress may by law provide for the case wherein neither a President elect nor a Vice-President elect shall have qualified, declaring who shall then act as President, or the manner in which one who is to act shall be selected, and such person shall act accordingly until a President or Vice-President shall have qualified.

Section 4. The Congress may by law provide for the case of the death of any of the persons from whom the House of Representatives may choose a President whenever the right of choice shall have devolved upon them, and for the case of the death of any of the persons from whom the Senate may choose a Vice-President whenever the right of choice shall have devolved upon them.

Section 5. Sections 1 and 2 shall take effect on the 15th day of October following the ratification of this article.

Section 6. This article shall be inoperative unless it shall have been ratified as an amendment to the Constitution by the legislatures of three-fourths of the several States within seven years from the date of its submission.

Amendment 21 (Ratified December 5, 1933)

Section 1. The eighteenth article of amendment to the Constitution of the United States is hereby repealed.

Section 2. The transportation or importation into any State, Territory, or possession of the United States for delivery or use therein of intoxicating liquors, in violation of the laws thereof, is hereby prohibited.

Section 3. This article shall be inoperative unless it shall have been ratified as an amendment to the Constitution by conventions in the several States, as provided in the Constitution, within seven years from the date of the submission hereof to the States by the Congress.

Amendment 22 (Ratified February 27, 1951)

Section 1. No person shall be elected to the office of the President more than twice, and no person who has held the office of President, or acted as President, for more than two years of a term to which some other person was elected President shall be elected to the office of the President more than once. But this Article shall not apply to any person holding the office of President when this Article was proposed by Congress, and shall not prevent any person who may be holding the office of President, or acting as President, during the term within which this Article becomes operative from holding the office of President or acting as President, during the term within which this Article becomes operative from holding the office of President or acting as President during the remainder of such term.

Section 2. This article shall be inoperative unless it shall have been ratified as an amendment to the Constitution by the legislatures of three-fourths of the several States within seven years from the date of its submission to the States by the Congress.

Amendment 23 (Ratified March 29, 1961)

Section 1. The District constituting the seat of Government of the United States shall appoint in such manner as the Congress may direct:

A number of electors of President and Vice-President equal to the whole number of Senators and Representatives in Congress to which the District would be entitled if it were a State, but in no event more than the least populous State; they shall be in addition to those appointed by the States, but they shall be considered, for the purpose of the election of President and Vice-President, to be electors appointed by a State; and they shall meet in the District and perform such duties as provided by the twelfth article of amendment.

Section 2. The Congress shall have power to enforce this article by appropriate legislation.

Amendment 24 (Ratified January 23, 1964)

Section 1. The right of citizens of the United States to vote in any primary or other election for President or Vice-President for electors for President or Vice-President, or for Senator or Representative in Congress, shall not be denied or abridged by the United States or any State by reason of failure to pay any poll tax or other tax.

Section 2. The Congress shall have power to enforce this article by appropriate legislation.

Amendment 25 (Ratified February 23, 1967)

Section 1. In case of the removal of the President from office or of his death or resignation, the Vice-President shall become President.

Section 2. Whenever there is a vacancy in the office of the Vice-President, the President shall nominate a Vice-President who shall take office upon confirmation by a majority vote of both Houses of Congress.

Section 3. Whenever the President transmits to the President pro tempore of the Senate and the Speaker of the House of Representatives his written declaration that he is unable to discharge the powers and duties of his office, and until he transmits to them a written declaration to the contrary, such powers and duties shall be discharged by the Vice-President as Acting-President.

Section 4. Whenever the Vice-President and a majority of either the principal officers of the executive departments or of such other body as Congress may by law provide, transmit to the President pro tempore of the Senate and the Speaker of the House of Representatives their written declaration that the President is unable to discharge the powers and duties of his office, the Vice-President shall immediately assume the powers and duties of the office as Acting President.

Thereafter, when the President transmits to the President pro tempore of the Senate and the Speaker of the House of Representatives his written declaration that no inability exists, he shall resume the powers and duties of his office unless the Vice-President and a majority of either the principal officers of the executive department or of such other body of Congress may by law provide, transmit within four days to the President pro tempore of the Senate and the Speaker of the House of Representatives their written declaration that the President is unable to discharge the powers and duties of his office. Thereupon Congress shall decide the issue, assembling within forty-eight hours for that purpose if not in session. If the Congress, within twenty-one days after receipt of the latter written declaration, or, if Congress is not in session, within twenty-one days after Congress is required to assemble, determines by two-thirds vote of both Houses that the President is unable to discharge the powers and duties of his office, the Vice-President shall continue to discharge the same as Acting President; otherwise, the President shall resume the powers and duties of his office.

Amendment 26 (Ratified July 1, 1971)

Section 1. The right of citizens of the United States, who are eighteen years of age or older, to vote shall not be denied or abridged by the United States or by any State on account of age.

Section 2. The Congress shall have power to enforce this article by appropriate legislation.

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CHAPTER 8

REFERENCES

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2. "Clean Air Amendments of 1970" - P.L. 91-604, (December 31, 1970)
3. "National Ambient Air Quality Standards," Federal Register Volume 36, No. 67 (April 7, 1971), Part II.
4. "Air Programs Approval and Promulgation of Implementation Plans," Federal Register Volume 37, No. 105 (May 31, 1972), Part III.
5. "The National Environmental Policy Act of 1969," - P.L. 91-190, (January 1, 1970)
6. A Digest of State Air Pollution Laws, 1966 edition (Public Health Service Publication No. 711, 1966)
7. The Conservation Foundation. A Citizen's Guide to Clean Air. (Washington: Conservation Foundation, 1972)
8. Indirect or Complex Sources, Federal Register Volume 38, No. 74, (Wednesday, April 18, 1973) and Federal Register Volume 38, No. 116, (Monday, June 18, 1973).
9. Livingston and Blayney, "Report on Guidelines for Relating Air Pollution Control to Land Use and Transportation Planning in the State of California," California Air Resource Board, July, 1973.
10. Izaak Walton League of America, "A Citizen's Guide to Clean Water," Izaak Walton League, Arlington, Va., 1973.
11. Gerald R. Mylroie, California Environmental Law, A Guide, Center for California Public Affairs, Claremont, Ca., 1971.
12. "Environmental Law," Second Edition, Arnold W. Reitze, Jr., North American International, Washington, D.C., 1972 (Excellent)
13. "Environmental Planning - Law of Land and Resources," Arnold W. Reitze, Jr., North American International, Washington, D.C., 1974 (Excellent)
14. "EPA Regulations on Solid Waste Disposal and Resource Recovery Grants," Federal Register Volume 36, No. 181, (September 17, 1971).
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16. "Federal Water Pollution Control Act Amendments of 1972," Report No. 92-1465, Superintendent of Documents, U. S. Government Printing Office, Washington, D.C. 20402.

17. "Urban Mass Transportation Act of 1964 as Amended through October 15, 1970," P.L. 88-365 and P.L. 91-453, U. S. Department of Transportation, Washington, D.C. 20590.

18. "North Carolina Pesticide Law of 1971," Article 52, Chapter 143, Article 10 of Chapter 66 and Chapter 150 of the General Statutes of North Carolina, North Carolina Department of Agriculture, Raleigh, N.C.

19. "Legal Systems for Environmental Protection - Japan, Sweden, United States," Food and Agriculture Organization of the United Nations, Legislative Studies No. 4, Peter H. Sand, Legislation Branch, Legal Office, Rome, 1972.

20. "Environmental Law and Policy, Readings and Notes on Air Pollution and Related Problems," James E. Krier, The Bobbs-Merrill Co., Inc., 1971.

21. "Industrial Pollution Control Handbook," Herbert F. Lund, Editor, McGraw-Hill Book Company, 1971.

22. Arthur C. Stern, Air Pollution, Volume III (2nd ed.; New York: Academic Press, 1968)

23. "Federal Laws: Health/Environment Manpower," Edited by Grupenhoff and Strickland, Science and Communications Group, Washington, D.C., 1972.

24. "1973 Catalog of Federal Domestic Assistance," Executive Office of the President, Office of Management and Budget, Library of Congress Card No. 73-600118, U. S. Government Printing Office, Washington, D.C., 1973.

25. "Public Housing in the United States: Analysis of Problems and Recommendations for Possible Solutions," Prepared for Professor S. M. Slaby, Department of Civil and Geological Engineering, School of Engineering and Applied Science, Princeton University, 1973.

APPENDIX

SAMPLE FORMS

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* * *
* * * * *
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* * *
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DEPARTMENT OF ENVIRONMENTAL PROTECTION

ORDER

To:

Re: Air Pollution Control Code
VIOLATION OCCURRED ON PREMISES KNOWN AS

Dear Sir:

WHEREAS, the State Department of Environmental Protection has determined by investigation(s) or inspection(s) made pursuant to the Provisions of the Air Pollution Control Act, that on ____________________ you did violate Chapter __________, Section(s) ______________ of the Air Pollution Control Code. (See paragraph(s) ________________ below).

NOW THEREFORE, YOU ARE HEREBY ORDERED to cease violation of said Chapter on premises owned, leased, operated or maintained by you on or before ______________ ______________.

A CHAPTER II, SECTION 1.1: The investigation(s) discloses open burning of refus including ____ on th premises identified above.

B CHAPTER II, SECTION 1.2: The investigation(s) discloses a salvage operation by open burning of ________________________ on the premises identified above.

C CHAPTER IV, SECTION 2.1: The investigation(s) discloses smoke from fuel-burning equipment, the shade or appearance of which was darker than Number 2 of the Ringelmann Smoke Chart, being emitted into the open air on the premises identified above.

D CHAPTER XI, SECTION 3.2(b): The investigation(s) discloses smoke from the incinerator stack, the shade or appearance of which was darker than Number 1 of the Ringelmann Smoke Chart, being emitted into the open air on the premises identified above.

E CHAPTER XI, SECTION 3.3: The investigation(s) discloses the emission of particles of unburned waste or ash from the incinerator stack which were individually large enough to be visible while suspended in the atmosphere at the premises identified above.

F CHAPTER XI, SECTION 3.4: The investigation(s) discloses the emissions of odo from the use of the incinerator on the premises identified above, which were detectable by the sense of smell in an area of human use or occupancy.

G CHAPTER XI, SECTION 2.1(b): The investigation(s) discloses the use of an incinerator not of the multiple chamber type nor of the types approved by the Department as being equally effective for the purpose of air pollution contro

Dated ________________________

____
Director

cc: Board of Health:
State Health District:
Copy For:
Certified Mail

DEPARTMENT OF ENVIRONMENTAL PROTECTION

NOTICE OF PROSECUTION

Re: Air Pollution Control Code
ORDER, Dated______________

VIOLATION OCCURRED ON PREMISES KNOWN AS:

Dear Sir:

Investigation(s), by this Department on____________________discloses violation(s) of Chapter_________, Section(s)___________of the Air Pollution Control Code and referenced ORDER (see paragraph(s)______________below).

Prosecution is being withheld until_____________________to allow for settlement of a claim for a penalty against you in the amount of $________. Should you desire to settle your claim, payment must be made on or before this date by money order or check drawn to the order of the Department of Environmental Protection. In the event payment is not made within the time specified, this case will be referred to the Office of the Attorney General for prosecution.

A CHAPTER II, SECTION 1.1: The investigation(s) discloses open burning of refuse including____on the premises identified above.

B CHAPTER II, SECTION 1.2: The investigation(s) discloses a salvage operation by open burning of_______________________on the premises identified above.

C CHAPTER IV, SECTION 2.1: The investigation(s) discloses smoke from fuel-burning equipment, the shade or appearance of which was darker than Number 2 of the Ringelmann Smoke Chart, being emitted into the open air on the premises identified above.

D CHAPTER XI, SECTION 3.2(b): The investigation(s) discloses smoke from the incinerator stack, the shade or appearance of which was darker than Number 1 of the Ringelmann Smoke Chart, being emitted into the open air on the premises identified above.

E CHAPTER XI, SECTION 3.3: The investigation(s) discloses the emission of particles of unburned waste or ash from the incinerator stack which were individually large enough to be visible while suspended in the atmosphere at the premises identified above.

F CHAPTER XI, SECTION 3.4: The investigation(s) discloses the emission of odors, from the use of the incinerator on the premises identified above, which were detectable by the sense of smell in an area of human use or occupancy.

G CHAPTER XI, SECTION 2.1(b): The investigation(s) discloses the use of an incinerator not of the multiple chamber type nor of the types approved by the Department as being equally effective for the purpose of air pollution control.

Dated____________________ ________________________
Director

cc: Board of Health:
State Health District:
Copy For:
Certified Mail

DEPARTMENT OF HEALTH

AIR POLLUTION CONTROL CODE
FIELD RECORD OF VIOLATION

DATE____________ TIME AT SITE__________ a.m. / p.m. from __________ a.m. / p.m. to

STATE HEALTH DISTRICT____________________ COUNTY______________

Sec. A

PERSON IN VIOLATION

FULL BUSINESS NAME________________________________

MAILING ADDRESS________________________________
No. Street Post Office Zip Code

TYPE OF OWNERSHIP:

Individual__________
Partnership__________
Corporation__________
Municipal (type)__________

NAME OF OWNER, PARTNERS, OFFICERS, OFFICIALS	TITLE

Person(s) interviewed________________________________

Person authorized to receive processes________________________________
Name

MAILING ADDRESS________________________________
No. Street Post Office Zip Code

REMARKS________________________________

____

Sec. B

LOCATION OF VIOLATION

LOCATION ADDRESS________________________________
No. Street Municipality

(Show details on reverse side) Book Plate______ Lot_____ Block______

Premises occupied as: Owner________ Lessee________ Tenant________

Owner________________________________
Name No. Street City

Sec. C

DETAILS OF VIOLATION

CODE REFERENCE Chapter(s)________ Section(s)______ Paragraph(S)________

DETAILS________________________________

____

____

____

____

REMARKS________________________________

____

____

RECOMMENDED ACTION________________________________

____

____
Signed

____
Title

NATURE OF OPERATION (Check one that applies)

_____ a. Agriculture (Includes farming, fishing, forestry)

_____ b. Mining

_____ c. Construction

_____ d. Manufacturing (type)

_____ e. Transportation

_____ f. Wholesale and Retail Trade (Includes restaurants)

_____ g. Utilities

_____ h. Business and Personal Services (Includes Banks, Real Estate Co., Insurance Co., Hotels, Recreational Services i.e., Movies)

_____ i. Salvage

_____ j. Refuse and Garbage Disposal

_____ k. Government (Includes Federal, State and Local)

_____ l. Other

DRAW DIAGRAM BELOW SHOWING LOCATION, STREETS AND DISTANCES OF VIOLATION WITH RESPECT TO STREETS AND/OR LANDMARKS.

Indicate Points
of Compass
N.E.S.W.

Comments on Location ______________________________

Statements about violation made by person interviewed ______________________________

COUNTY OF APEX

ENVIRONMENTAL QUALITY AGENCY

Cycle__________

(Check One)
_____ NOTICE OF INTENT TO REVOKE PERMIT
_____ NOTICE OF VIOLATION
_____ ORDER TO CEASE VIOLATION
_____ NOTICE OF PROSECUTION/OFFER OF SETTLEMENT

Firm Name: ____

You are hereby notified that pursuant to the Federal, State, County (Circle One) Air Quality Law, a misdemeanor/nuisance/violation(s) (Circle One) has been committed on ______________ (Time), ________________ (Cycle) by the ____ ____.

_____ Prosecution is being withheld until ___________ (Time) to allow settlement of penalty against you in the amount of $_________. If payment is not made the case will be referred to the county attorney for prosecution.

_____ You are required to appear before the county court to answer to this charge on: ____ (Date) (Cycle) (Time).

NOTE: Violation Summary on back of page.

VIOLATION SUMMARY

		APCO Observation or Measurement	Violation of Law/Rule No.	APEX Co. Standard
Emissions lbs./hr.	particulates			
	SO_2			
	CO			
	NO_x			
	HC			
Emissions lbs./1000 lbs. materials	particulates			
	SO_2			
	NO_x			
	HC			
Smoke	R.#			
Odor	S.#			
Fuel	% Sulfur			
	% Ash			

Notice Received by: ______________________________
(Signature)

on: ______________________________
(Time) (Cycle) (Date)

Comments: ______________________________

____

Court Record of Disposition:

_____ Not Guilty _____ Guilty _____ Other ______________
_____ Fine $________; Injunction ______________

(One copy of this form must be provided to alleged violator and one copy retained for official APCO/Court records).